Connecting via Winsock to STN

Welcome to STN International! Enter x:X

Thank you for accessing STN

Our services are currently unavailable. The regularly scheduled hours of operations are:

US Eastern time: Sunday from 01:00 (1:00 AM) until
Saturday at 22:00 (10:00 PM)

On the first Saturday of each month, STN is available only until 17:00 (5:00 PM).

Tokyo time: Sunday from 14:00 (2:00 PM) until
Sunday at 11:00 (11:00 AM)

On the Sunday of the first weekend of each month, STN is available only until 06:00 (6:00 AM).

Additionally, representatives from the Help Desk and Customer Service may be reached from 08:00 (8:00 AM) to 20:00 (8:00 PM) US Eastern time, Monday through Friday, at the following telephone numbers:

Help Desk	- (800) 848-6533	North America
	- (614) 447-3698	Elsewhere
Customer Service	- (800) 753-4227	North America
	- (614) 447-3731	Elsewhere

We can also be contacted via email at HELP@CAS.ORG.

Connection closed by remote host

Connecting via Winsock to STN

Welcome to STN International! Enter x:X

LOGINID:ssptamls1742

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1 Web Page for STN Seminar Schedule - N. America

```
 NEWS  2  APR 04  STN AnaVist, Version 1, to be discontinued
 NEWS  3  APR 15  WPIDS, WPINDEX, and WPIX enhanced with new
                  predefined hit display formats
 NEWS  4  APR 28  EMBASE Controlled Term thesaurus enhanced
 NEWS  5  APR 28  IMSRESEARCH reloaded with enhancements
 NEWS  6  MAY 30  INPAFAMDB now available on STN for patent family
                  searching
 NEWS  7  MAY 30  DGENE, PCTGEN, and USGENE enhanced with new homology
                  sequence search option
 NEWS  8  JUN 06  EPFULL enhanced with 260,000 English abstracts
 NEWS  9  JUN 06  KOREAPAT updated with 41,000 documents
 NEWS 10  JUN 13  USPATFULL and USPAT2 updated with 11-character
                  patent numbers for U.S. applications
 NEWS 11  JUN 19  CAS REGISTRY includes selected substances from
                  web-based collections
 NEWS 12  JUN 25  CA/CAplus and USPAT databases updated with IPC
                  reclassification data
 NEWS 13  JUN 30  AEROSPACE enhanced with more than 1 million U.S.
                  patent records
 NEWS 14  JUN 30  EMBASE, EMBAL, and LEMBASE updated with additional
                  options to display authors and affiliated
                  organizations
 NEWS 15  JUN 30  STN on the Web enhanced with new STN AnaVist
                  Assistant and BLAST plug-in
 NEWS 16  JUN 30  STN AnaVist enhanced with database content from EPFULL
 NEWS 17  JUL 28  CA/CAplus patent coverage enhanced
 NEWS 18  JUL 28  EPFULL enhanced with additional legal status
                  information from the epoline Register
 NEWS 19  JUL 28  IFICDB, IFIPAT, and IFIUDB reloaded with enhancements
 NEWS 20  JUL 28  STN Viewer performance improved
 NEWS 21  AUG 01  INPADOCDB and INPAFAMDB coverage enhanced
 NEWS 22  AUG 13  CA/CAplus enhanced with printed Chemical Abstracts
                  page images from 1967-1998
 NEWS 23  AUG 15  CAOLD to be discontinued on December 31, 2008
 NEWS 24  AUG 15  CAplus currency for Korean patents enhanced
 NEWS 25  AUG 25  CA/CAplus, CASREACT, and IFI and USPAT databases
                  enhanced for more flexible patent number searching
 NEWS 26  AUG 27  CAS definition of basic patents expanded to ensure
                  comprehensive access to substance and sequence
                  information

 NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3,
              AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that
specific topic.

  All use of STN is subject to the provisions of the STN Customer
  agreement.  Please note that this agreement limits use to scientific
  research.  Use for software development or design or implementation
  of commercial gateways or other similar uses is prohibited and may
  result in loss of user privileges and other penalties.

* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 09:40:56 ON 08 SEP 2008

=>
```

```
=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                      0.21       0.21

FILE 'REGISTRY' ENTERED AT 09:41:08 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    7 SEP 2008  HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES:   7 SEP 2008  HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html


Connecting via Winsock to STN



Welcome to STN International!  Enter x:X

LOGINID:ssptamls1742

PASSWORD:
 * * * * * * RECONNECTED TO STN INTERNATIONAL * * * * * *
SESSION RESUMED IN FILE 'REGISTRY' AT 09:41:50 ON 08 SEP 2008
FILE 'REGISTRY' ENTERED AT 09:41:50 ON 08 SEP 2008
COPYRIGHT (C) 2008 American Chemical Society (ACS)
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                      0.46       0.67

=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                      0.46       0.67

FILE 'REGISTRY' ENTERED AT 09:42:04 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.
```

```
STRUCTURE FILE UPDATES:    7 SEP 2008  HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES:   7 SEP 2008  HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0-0.5 Si/mac and 0-0.5 Fe and 80-100
Al/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        529244 0-0.5/MAC
        412336 SI/MAC
        216154 0-0.5 SI/MAC
                 (0-0.5/MAC (P) SI/MAC)
        911670 0
         64739 0.5
        655143 FE
           407 FES
        655531 FE
                 (FE OR FES)
            32 0-0.5 FE
                 (0(W)0.5(W)FE)
        514427 80-100/MAC
        263320 AL/MAC
         74008 80-100 AL/MAC
                 (80-100/MAC (P) AL/MAC)
L1          1 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0-0.5 SI/MAC AND 0-0.5 FE
              AND 80-100 AL/MAC

=> d l1

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1001846-01-0  REGISTRY
ED   Entered STN:  06 Feb 2008
CN   Aluminum alloy, base, Al 82-99,Mn 1.1-7,Mg 0.1-6,Sc 0-1.5,Cr 0-0.5,Cu
     0-0.5,Ni 0-0.5,Si 0-0.5,Co 0-0.1,Fe 0-0.1,La 0-0.1,Mo 0-0.1,Nb 0-0.1,Ti
     0-0.1,V 0-0.1,W 0-0.1,Y 0-0.1,Zn 0-0.1,Zr 0-0.1  (CA INDEX NAME)
OTHER NAMES:
CN   Mn 1.1-7, Mg 0.1-6, Sc 0-1.5, Si 0-0.5, Fe 0-0.1, Cu 0-0.5, Cr 0-0.5,
     Ni 0-0.5, Ti 0-0.1, V 0-0.1, Co 0-0.1, Zn 0-0.1, Zr 0-0.1, Nb 0-0.1, Mo
     0-0.1, Y 0-0.1, W 0-0.1, La 0-0.1, Al bal.
MF   Al . Co . Cr . Cu . Fe . La . Mg . Mn . Mo . Nb . Ni . Sc . Si . Ti . V .
     W . Y . Zn . Zr
CI   AYS
SR   CA
```

LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	82 - 99	7429-90-5
Mn	1.1 - 7	7439-96-5
Mg	0.1 - 6	7439-95-4
Sc	0 - 1.5	7440-20-2
Cr	0 - 0.5	7440-47-3
Cu	0 - 0.5	7440-50-8
Ni	0 - 0.5	7440-02-0
Si	0 - 0.5	7440-21-3
Co	0 - 0.1	7440-48-4
Fe	0 - 0.1	7439-89-6
La	0 - 0.1	7439-91-0
Mo	0 - 0.1	7439-98-7
Nb	0 - 0.1	7440-03-1
Ti	0 - 0.1	7440-32-6
V	0 - 0.1	7440-62-2
W	0 - 0.1	7440-33-7
Y	0 - 0.1	7440-65-5
Zn	0 - 0.1	7440-66-6
Zr	0 - 0.1	7440-67-7

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	39.43	40.10

FILE 'REGISTRY' ENTERED AT 09:43:37 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

```
=>  SET TERMSET E#

SET COMMAND COMPLETED

=>  DEL SEL Y


=>  SEL L1 1 RN

E1 THROUGH E1 ASSIGNED

=>  S E1/RN

L2            1 1001846-01-0/RN

=>  SET TERMSET LOGIN

SET COMMAND COMPLETED

=>  FIL CAPLUS

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.55      40.65

FILE 'CAPLUS' ENTERED AT 09:43:41 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 8 Sep 2008  VOL 149 ISS 11
FILE LAST UPDATED: 7 Sep 2008  (20080907/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=>  S L2

L3            2 L2

=> DIS L3 1 IBIB IABS
THE ESTIMATED COST FOR THIS REQUEST IS 2.91 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L3   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2008 ACS on STN
```

ACCESSION NUMBER: 2008:91482 CAPLUS
DOCUMENT NUMBER: 148:173393
TITLE: Aluminum alloys containing nanocomposite phases
INVENTOR(S): Hung, Wei-Peng; Chen, Chien-Tong
PATENT ASSIGNEE(S): Advanced Material Specialty Inc., Taiwan; Nelson Precision Casting Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 10pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008013826	A	20080124	JP 2006-187815	20060707
PRIORITY APPLN. INFO.:			JP 2006-187815	20060707

ABSTRACT:
The title alloy has a chemical composition contain Mn 1.1-7.0, Mg 0.1-6.0, and Sc 0.01-1.5 weight% and includes long cylindrical nanocomposite phases. Optionally, the alloys also contain Si 0.01-0.5, Fe 0.01-0.10, Cu 0.01-0.50, Cr 0.01-0.50, Ni 0.01-0.50, Ti 0.01-0.1, V 0.01-0.1, Co 0.01-0.1, Zn 0.01-0.1, Zr 0.01-0.1, Nb 0.01-0.1, Mo 0.01-0.1, Y 0.01-0.1, W 0.01-0.1, and/or La 0.01-0.1 weight%. The alloys are especially suitable for golf club heads and golf club shafts.

=> DIS L3 2 IBIB IABS
THE ESTIMATED COST FOR THIS REQUEST IS 2.91 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2008:51647 CAPLUS
DOCUMENT NUMBER: 148:219699
TITLE: Aluminum alloy having nanometer compound phase for golf clubs
INVENTOR(S): Hong, Weipeng; Chen, Jiantong
PATENT ASSIGNEE(S): Amspec Material Inc., Peop. Rep. China; Fu Sheng Group
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101100716	A	20080109	CN 2006-10090373	20060703
PRIORITY APPLN. INFO.:			CN 2006-10090373	20060703

ABSTRACT:
The alloy comprises Mn 1.1-7, Mg 0.1-6, Sc 0.01-1.5%, Al bal. The alloy may further contain Si 0.01-0.5, Fe 0.01-0.1, Cu 0.01-0.5, Cr 0.01-0.5, Ni 0.01-0.5, Ti 0.01-0.1, V 0.01-0.1, Co 0.01-0.1, Zn 0.01-0.1, Zr 0.01-0.1, Nb 0.01-0.1, Mo 0.01-0.1, Y 0.01-0.1, W 0.01-0.1, and/or La 0.01-0.1.

=> FIL REGISTRY
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	7.26	47.91

```
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)        SINCE FILE      TOTAL
                                                     ENTRY    SESSION
CA SUBSCRIBER PRICE                                  -1.60      -1.60

FILE 'REGISTRY' ENTERED AT 09:45:33 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    7 SEP 2008  HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES:   7 SEP 2008  HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0-0.5 Si/mac and 0-0.5 Fe and 0.1-2.0
Ti/mac and 0.1-2.0 Zr/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        529244 0-0.5/MAC
        412336 SI/MAC
        216154 0-0.5 SI/MAC
                 (0-0.5/MAC (P) SI/MAC)
        911670 0
         64739 0.5
        655143 FE
           407 FES
        655531 FE
                 (FE OR FES)
            32 0-0.5 FE
                 (0(W)0.5(W)FE)
        674473 0.1-2.0/MAC
        142635 TI/MAC
         78487 0.1-2.0 TI/MAC
                 (0.1-2.0/MAC (P) TI/MAC)
        674473 0.1-2.0/MAC
         71325 ZR/MAC
         37671 0.1-2.0 ZR/MAC
                 (0.1-2.0/MAC (P) ZR/MAC)
L4            1 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0-0.5 SI/MAC AND 0-0.5 FE
                AND 0.1-2.0 TI/MAC AND 0.1-2.0 ZR/MAC
```

=> d l4

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2008 ACS on STN
RN 1001846-01-0 REGISTRY
ED Entered STN: 06 Feb 2008
CN Aluminum alloy, base, Al 82-99,Mn 1.1-7,Mg 0.1-6,Sc 0-1.5,Cr 0-0.5,Cu 0-0.5,Ni 0-0.5,Si 0-0.5,Co 0-0.1,Fe 0-0.1,La 0-0.1,Mo 0-0.1,Nb 0-0.1,Ti 0-0.1,V 0-0.1,W 0-0.1,Y 0-0.1,Zn 0-0.1,Zr 0-0.1 (CA INDEX NAME)
OTHER NAMES:
CN Mn 1.1-7, Mg 0.1-6, Sc 0-1.5, Si 0-0.5, Fe 0-0.1, Cu 0-0.5, Cr 0-0.5, Ni 0-0.5, Ti 0-0.1, V 0-0.1, Co 0-0.1, Zn 0-0.1, Zr 0-0.1, Nb 0-0.1, Mo 0-0.1, Y 0-0.1, W 0-0.1, La 0-0.1, Al bal.
MF Al . Co . Cr . Cu . Fe . La . Mg . Mn . Mo . Nb . Ni . Sc . Si . Ti . V . W . Y . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	82 - 99	7429-90-5
Mn	1.1 - 7	7439-96-5
Mg	0.1 - 6	7439-95-4
Sc	0 - 1.5	7440-20-2
Cr	0 - 0.5	7440-47-3
Cu	0 - 0.5	7440-50-8
Ni	0 - 0.5	7440-02-0
Si	0 - 0.5	7440-21-3
Co	0 - 0.1	7440-48-4
Fe	0 - 0.1	7439-89-6
La	0 - 0.1	7439-91-0
Mo	0 - 0.1	7439-98-7
Nb	0 - 0.1	7440-03-1
Ti	0 - 0.1	7440-32-6
V	0 - 0.1	7440-62-2
W	0 - 0.1	7440-33-7
Y	0 - 0.1	7440-65-5
Zn	0 - 0.1	7440-66-6
Zr	0 - 0.1	7440-67-7

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	43.66	91.57

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

FILE 'REGISTRY' ENTERED AT 09:46:25 ON 08 SEP 2008

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> SET TERMSET E#

SET COMMAND COMPLETED

=> DEL SEL Y

=> SEL L4 1 RN

E1 THROUGH E1 ASSIGNED

=> S E1/RN

L5 1 1001846-01-0/RN

=> SET TERMSET LOGIN

SET COMMAND COMPLETED

=> FIL CAPLUS

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.55	92.12

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

FILE 'CAPLUS' ENTERED AT 09:46:29 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 8 Sep 2008 VOL 149 ISS 11
FILE LAST UPDATED: 7 Sep 2008 (20080907/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> S L5

L6 2 L5

=> DIS L6 1 TI

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
TI Aluminum alloys containing nanocomposite phases

=> DIS L6 2 TI

L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2008 ACS on STN
TI Aluminum alloy having nanometer compound phase for golf clubs

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0-3.0 Si/mac and 0-3.0 Fe and 0.1-2.0
Ti/mac and 0.1-2.0 Zr/mac
'MAC' IS NOT A VALID FIELD CODE
0 3.5-4.5 MG/MAC
0 0.8-1.5 MN/MAC
0 0-3.0 SI/MAC
5989705 0
7366573 3
5989705 0
876873 FE
11373 FES
883113 FE
(FE OR FES)
28 0-3.0 FE
(0(W)3(W)0(W)FE)
0 0.1-2.0 TI/MAC
0 0.1-2.0 ZR/MAC
L7 0 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0-3.0 SI/MAC AND 0-3.0 FE
AND 0.1-2.0 TI/MAC AND 0.1-2.0 ZR/MAC

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0-3.0 Si/mac and 0-3.0 Fe/mac and
0.1-2.0 Ti/mac and 0.1-2.0 Zr/mac
'MAC' IS NOT A VALID FIELD CODE
0 3.5-4.5 MG/MAC
0 0.8-1.5 MN/MAC
0 0-3.0 SI/MAC
0 0-3.0 FE/MAC
0 0.1-2.0 TI/MAC
0 0.1-2.0 ZR/MAC
L8 0 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0-3.0 SI/MAC AND 0-3.0
FE/MAC AND 0.1-2.0 TI/MAC AND 0.1-2.0 ZR/MAC

```
=> s 3.5-4.5 MG/mac and 0.8-1.5 MN/mac and 0.0-3.0 SI/mac and 0.0-3.0 Fe/mac and
0.1-2.0 TI/mac and 0.1-2.0 ZR/mac
'MAC' IS NOT A VALID FIELD CODE
             0 3.5-4.5 MG/MAC
             0 0.8-1.5 MN/MAC
             0 0.0-3.0 SI/MAC
             0 0.0-3.0 FE/MAC
             0 0.1-2.0 TI/MAC
             0 0.1-2.0 ZR/MAC
L9           0 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-3.0 SI/MAC AND 0.0-3.0
               FE/MAC AND 0.1-2.0 TI/MAC AND 0.1-2.0 ZR/MAC

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0.0-1.0 SI/mac and 0.0-1.0 FE/mac
'MAC' IS NOT A VALID FIELD CODE
             0 3.5-4.5 MG/MAC
             0 0.8-1.5 MN/MAC
             0 0.0-1.0 SI/MAC
             0 0.0-1.0 FE/MAC
L10          0 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-1.0 SI/MAC AND 0.0-1.0
               FE/MAC

=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                    11.60     103.72

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                     0.00      -1.60

FILE 'REGISTRY' ENTERED AT 09:49:41 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2008 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:    7 SEP 2008  HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES:   7 SEP 2008  HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0.0-1.0 SI/mac and 0.0-1.0 FE/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
```

```
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        606186 0.0-1.0/MAC
        412336 SI/MAC
        275399 0.0-1.0 SI/MAC
                 (0.0-1.0/MAC (P) SI/MAC)
        606186 0.0-1.0/MAC
        548616 FE/MAC
         56550 0.0-1.0 FE/MAC
                 (0.0-1.0/MAC (P) FE/MAC)
L11        300 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-1.0 SI/MAC AND 0.0-1.0
               FE/MAC

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0.0-1.0 SI/mac and 0.0-1.0 FE/mac and
80-100 AL/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        606186 0.0-1.0/MAC
        412336 SI/MAC
        275399 0.0-1.0 SI/MAC
                 (0.0-1.0/MAC (P) SI/MAC)
        606186 0.0-1.0/MAC
        548616 FE/MAC
         56550 0.0-1.0 FE/MAC
                 (0.0-1.0/MAC (P) FE/MAC)
        514427 80-100/MAC
        263320 AL/MAC
         74008 80-100 AL/MAC
                 (80-100/MAC (P) AL/MAC)
L12        295 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-1.0 SI/MAC AND 0.0-1.0
               FE/MAC AND 80-100 AL/MAC

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0.0-1.0 SI/mac and 0.0-1.0 FE/mac and
80-100 AL/mac and 0.1-3.0 TI/mac and 0.1-3.0 Zr/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        606186 0.0-1.0/MAC
        412336 SI/MAC
        275399 0.0-1.0 SI/MAC
                 (0.0-1.0/MAC (P) SI/MAC)
        606186 0.0-1.0/MAC
        548616 FE/MAC
         56550 0.0-1.0 FE/MAC
                 (0.0-1.0/MAC (P) FE/MAC)
        514427 80-100/MAC
        263320 AL/MAC
         74008 80-100 AL/MAC
                 (80-100/MAC (P) AL/MAC)
        714863 0.1-3.0/MAC
```

```
        142635 TI/MAC
         84790 0.1-3.0 TI/MAC
                 (0.1-3.0/MAC (P) TI/MAC)
        714863 0.1-3.0/MAC
         71325 ZR/MAC
         40560 0.1-3.0 ZR/MAC
                 (0.1-3.0/MAC (P) ZR/MAC)
L13         60 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-1.0 SI/MAC AND 0.0-1.0
               FE/MAC AND 80-100 AL/MAC AND 0.1-3.0 TI/MAC AND 0.1-3.0 ZR/MAC

=> d l13

L13  ANSWER 1 OF 60  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1045685-50-4  REGISTRY
ED   Entered STN:  02 Sep 2008
CN   INDEX NAME NOT YET ASSIGNED
MF   Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+===============
    Al      91  -  97        7429-90-5
    Mg       3  -   5        7439-95-4
    Mn       0  -   1        7439-96-5
    Cu       0  -   0.6      7440-50-8
    Fe       0  -   0.5      7439-89-6
    Si       0  -   0.5      7440-21-3
    Zn       0  -   0.5      7440-66-6
    Cr       0  -   0.4      7440-47-3
    Zr       0  -   0.3      7440-67-7
    Ti       0  -   0.2      7440-32-6

             1 REFERENCES IN FILE CA (1907 TO DATE)
             1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l13 2

L13  ANSWER 2 OF 60  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1043448-39-0  REGISTRY
ED   Entered STN:  25 Aug 2008
CN   Aluminum alloy, base, Al 86-99,Mg 0.6-4.5,Si 0.3-2.5,Cu 0-1.5,Fe 0-1.5,Zn
     0-1.5,Mn 0-1,Cr 0-0.5,Zr 0-0.5,V 0-0.3,Ti 0-0.2  (CA INDEX NAME)
MF   Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+===============
    Al      86   -  99        7429-90-5
    Mg      0.6 -   4.5       7439-95-4
    Si      0.3 -   2.5       7440-21-3
    Cu      0   -   1.5       7440-50-8
    Fe      0   -   1.5       7439-89-6
    Zn      0   -   1.5       7440-66-6
    Mn      0   -   1         7439-96-5
    Cr      0   -   0.5       7440-47-3
```

```
    Zr       0   -   0.5       7440-67-7
    V        0   -   0.3       7440-62-2
    Ti       0   -   0.2       7440-32-6

               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l13 3

L13  ANSWER 3 OF 60  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1015163-38-8  REGISTRY
ED   Entered STN:  17 Apr 2008
CN   Aluminum alloy, base, Al 74-100,Zn 0-10,Mg 0.3-5,Si 0.2-2,Cr 0-2,Cu 0-2,Fe
     0-1,Mn 0-1,Nb 0-1,V 0-1,Zr 0-1,Ti 0-0.5  (CA INDEX NAME)
MF   Al . Cr . Cu . Fe . Mg . Mn . Nb . Si . Ti . V . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+================
    Al      74   - 100       7429-90-5
    Zn       0   -  10       7440-66-6
    Mg     0.3   -   5       7439-95-4
    Si     0.2   -   2       7440-21-3
    Cr       0   -   2       7440-47-3
    Cu       0   -   2       7440-50-8
    Fe       0   -   1       7439-89-6
    Mn       0   -   1       7439-96-5
    Nb       0   -   1       7440-03-1
    V        0   -   1       7440-62-2
    Zr       0   -   1       7440-67-7
    Ti       0   -   0.5     7440-32-6

               1 REFERENCES IN FILE CA (1907 TO DATE)
               1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l13 4

L13  ANSWER 4 OF 60  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1001846-01-0  REGISTRY
ED   Entered STN:  06 Feb 2008
CN   Aluminum alloy, base, Al 82-99,Mn 1.1-7,Mg 0.1-6,Sc 0-1.5,Cr 0-0.5,Cu
     0-0.5,Ni 0-0.5,Si 0-0.5,Co 0-0.1,Fe 0-0.1,La 0-0.1,Mo 0-0.1,Nb 0-0.1,Ti
     0-0.1,V 0-0.1,W 0-0.1,Y 0-0.1,Zn 0-0.1,Zr 0-0.1  (CA INDEX NAME)
OTHER NAMES:
CN   Mn 1.1-7, Mg 0.1-6, Sc 0-1.5, Si 0-0.5, Fe 0-0.1, Cu 0-0.5, Cr 0-0.5, Ni
     0-0.5, Ti 0-0.1, V 0-0.1, Co 0-0.1, Zn 0-0.1, Zr 0-0.1, Nb 0-0.1, Mo
     0-0.1, Y 0-0.1, W 0-0.1, La 0-0.1, Al bal.
MF   Al . Co . Cr . Cu . Fe . La . Mg . Mn . Mo . Nb . Ni . Sc . Si . Ti . V .
     W . Y . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+================
    Al      82   -  99       7429-90-5
```

Mn	1.1	-	7	7439-96-5
Mg	0.1	-	6	7439-95-4
Sc	0	-	1.5	7440-20-2
Cr	0	-	0.5	7440-47-3
Cu	0	-	0.5	7440-50-8
Ni	0	-	0.5	7440-02-0
Si	0	-	0.5	7440-21-3
Co	0	-	0.1	7440-48-4
Fe	0	-	0.1	7439-89-6
La	0	-	0.1	7439-91-0
Mo	0	-	0.1	7439-98-7
Nb	0	-	0.1	7440-03-1
Ti	0	-	0.1	7440-32-6
V	0	-	0.1	7440-62-2
W	0	-	0.1	7440-33-7
Y	0	-	0.1	7440-65-5
Zn	0	-	0.1	7440-66-6
Zr	0	-	0.1	7440-67-7

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l13 5

L13 ANSWER 5 OF 60 REGISTRY COPYRIGHT 2008 ACS on STN
RN 954098-28-3 REGISTRY
ED Entered STN: 16 Nov 2007
CN Aluminum alloy, base, Al 76-99,Si 0-19,Cu 0-10,Mg 0-10,Zn 0-7.7,Sn 0-6.2,Ni 0-2.5,Fe 0.1-2,Mn 0-1.2,Zr 0-1,Cr 0-0.5,Ti 0-0.4,B 0-0.1,V 0-0.1 (CA INDEX NAME)
OTHER NAMES:
CN Aluminum 76-99, boron 0-0.1, chromium 0-0.5, copper 0-10, iron 0.1-2, magnesium 0-10, manganese 0-1.2, nickel 0-2.5, silicon 0-19, titanium 0-0.4, vanadium 0-0.1, zinc 0-7.7, zirconium 0-1, tin 0-6.2
MF Al . B . Cr . Cu . Fe . Mg . Mn . Ni . Si . Sn . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	76	-	99	7429-90-5
Si	0	-	19	7440-21-3
Cu	0	-	10	7440-50-8
Mg	0	-	10	7439-95-4
Zn	0	-	7.7	7440-66-6
Sn	0	-	6.2	7440-31-5
Ni	0	-	2.5	7440-02-0
Fe	0.1	-	2	7439-89-6
Mn	0	-	1.2	7439-96-5
Zr	0	-	1	7440-67-7
Cr	0	-	0.5	7440-47-3
Ti	0	-	0.4	7440-32-6
B	0	-	0.1	7440-42-8
V	0	-	0.1	7440-62-2

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l13 6

L13 ANSWER 6 OF 60 REGISTRY COPYRIGHT 2008 ACS on STN
RN 952105-95-2 REGISTRY
ED Entered STN: 31 Oct 2007
CN Aluminum alloy, base, Al 92-95,Mg 4-5.2,Mn 0.7-1,Zn 0-0.4,Cr 0-0.2,Cu 0-0.2,Fe 0-0.2,Si 0-0.2,Ti 0-0.2,Zr 0-0.2 (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	92 - 95	7429-90-5
Mg	4 - 5.2	7439-95-4
Mn	0.7 - 1	7439-96-5
Zn	0 - 0.4	7440-66-6
Cr	0 - 0.2	7440-47-3
Cu	0 - 0.2	7440-50-8
Fe	0 - 0.2	7439-89-6
Si	0 - 0.2	7440-21-3
Ti	0 - 0.2	7440-32-6
Zr	0 - 0.2	7440-67-7

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l13 7

L13 ANSWER 7 OF 60 REGISTRY COPYRIGHT 2008 ACS on STN
RN 949114-99-2 REGISTRY
ED Entered STN: 03 Oct 2007
CN Aluminum alloy, base, Al 81-97,Mg 3-14,Fe 0-1,Mn 0-1,Cr 0-0.5,Cu 0-0.5,Si 0-0.5,Ti 0-0.5,Zn 0-0.5,V 0-0.3,Zr 0-0.3 (CA INDEX NAME)
OTHER NAMES:
CN Aluminum 81-97, chromium 0-0.5, copper 0-0.5, iron 0-1, magnesium 3-14, manganese 0-1, silicon 0-0.5, titanium 0-0.5, vanadium 0-0.3, zinc 0-0.5, zirconium 0-0.3
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	81 - 97	7429-90-5
Mg	3 - 14	7439-95-4
Fe	0 - 1	7439-89-6
Mn	0 - 1	7439-96-5
Cr	0 - 0.5	7440-47-3
Cu	0 - 0.5	7440-50-8
Si	0 - 0.5	7440-21-3

```
    Ti        0  -   0.5       7440-32-6
    Zn        0  -   0.5       7440-66-6
    V         0  -   0.3       7440-62-2
    Zr        0  -   0.3       7440-67-7

              1 REFERENCES IN FILE CA (1907 TO DATE)
              1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 0.0-1.0 SI/mac and 0.0-1.0 FE/mac and
80-100 AL/mac and 0.2-3.0 TI/mac and 0.3-3.0 Zr/mac
        181008 3.5-4.5/MAC
         79605 MG/MAC
          5521 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        419377 0.8-1.5/MAC
        385693 MN/MAC
        134596 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        606186 0.0-1.0/MAC
        412336 SI/MAC
        275399 0.0-1.0 SI/MAC
                 (0.0-1.0/MAC (P) SI/MAC)
        606186 0.0-1.0/MAC
        548616 FE/MAC
         56550 0.0-1.0 FE/MAC
                 (0.0-1.0/MAC (P) FE/MAC)
        514427 80-100/MAC
        263320 AL/MAC
         74008 80-100 AL/MAC
                 (80-100/MAC (P) AL/MAC)
        699880 0.2-3.0/MAC
        142635 TI/MAC
         62383 0.2-3.0 TI/MAC
                 (0.2-3.0/MAC (P) TI/MAC)
        681560 0.3-3.0/MAC
         71325 ZR/MAC
         19205 0.3-3.0 ZR/MAC
                 (0.3-3.0/MAC (P) ZR/MAC)
L14         32 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 0.0-1.0 SI/MAC AND 0.0-1.0
               FE/MAC AND 80-100 AL/MAC AND 0.2-3.0 TI/MAC AND 0.3-3.0 ZR/MAC

=> d l14

L14  ANSWER 1 OF 32  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   1045685-50-4  REGISTRY
ED   Entered STN:  02 Sep 2008
CN   INDEX NAME NOT YET ASSIGNED
MF   Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component    Component       Component
               Percent     Registry Number
==========+==============+================
    Al       91  -  97        7429-90-5
    Mg        3  -   5        7439-95-4
    Mn        0  -   1        7439-96-5
    Cu        0  -   0.6      7440-50-8
    Fe        0  -   0.5      7439-89-6
    Si        0  -   0.5      7440-21-3
```

Zn	0	-	0.5	7440-66-6
Cr	0	-	0.4	7440-47-3
Zr	0	-	0.3	7440-67-7
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 2

L14 ANSWER 2 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 1043448-39-0 REGISTRY
ED Entered STN: 25 Aug 2008
CN Aluminum alloy, base, Al 86-99,Mg 0.6-4.5,Si 0.3-2.5,Cu 0-1.5,Fe 0-1.5,Zn 0-1.5,Mn 0-1,Cr 0-0.5,Zr 0-0.5,V 0-0.3,Ti 0-0.2 (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	86	-	99	7429-90-5
Mg	0.6	-	4.5	7439-95-4
Si	0.3	-	2.5	7440-21-3
Cu	0	-	1.5	7440-50-8
Fe	0	-	1.5	7439-89-6
Zn	0	-	1.5	7440-66-6
Mn	0	-	1	7439-96-5
Cr	0	-	0.5	7440-47-3
Zr	0	-	0.5	7440-67-7
V	0	-	0.3	7440-62-2
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 3

L14 ANSWER 3 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 1015163-38-8 REGISTRY
ED Entered STN: 17 Apr 2008
CN Aluminum alloy, base, Al 74-100,Zn 0-10,Mg 0.3-5,Si 0.2-2,Cr 0-2,Cu 0-2,Fe 0-1,Mn 0-1,Nb 0-1,V 0-1,Zr 0-1,Ti 0-0.5 (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Nb . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	74	-	100	7429-90-5
Zn	0	-	10	7440-66-6
Mg	0.3	-	5	7439-95-4
Si	0.2	-	2	7440-21-3
Cr	0	-	2	7440-47-3
Cu	0	-	2	7440-50-8
Fe	0	-	1	7439-89-6

Mn	0	-	1	7439-96-5
Nb	0	-	1	7440-03-1
V	0	-	1	7440-62-2
Zr	0	-	1	7440-67-7
Ti	0	-	0.5	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 4

L14 ANSWER 4 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 954098-28-3 REGISTRY
ED Entered STN: 16 Nov 2007
CN Aluminum alloy, base, Al 76-99,Si 0-19,Cu 0-10,Mg 0-10,Zn 0-7.7,Sn 0-6.2,Ni 0-2.5,Fe 0.1-2,Mn 0-1.2,Zr 0-1,Cr 0-0.5,Ti 0-0.4,B 0-0.1,V 0-0.1 (CA INDEX NAME)
OTHER NAMES:
CN Aluminum 76-99, boron 0-0.1, chromium 0-0.5, copper 0-10, iron 0.1-2, magnesium 0-10, manganese 0-1.2, nickel 0-2.5, silicon 0-19, titanium 0-0.4, vanadium 0-0.1, zinc 0-7.7, zirconium 0-1, tin 0-6.2
MF Al . B . Cr . Cu . Fe . Mg . Mn . Ni . Si . Sn . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	76 - 99	7429-90-5
Si	0 - 19	7440-21-3
Cu	0 - 10	7440-50-8
Mg	0 - 10	7439-95-4
Zn	0 - 7.7	7440-66-6
Sn	0 - 6.2	7440-31-5
Ni	0 - 2.5	7440-02-0
Fe	0.1 - 2	7439-89-6
Mn	0 - 1.2	7439-96-5
Zr	0 - 1	7440-67-7
Cr	0 - 0.5	7440-47-3
Ti	0 - 0.4	7440-32-6
B	0 - 0.1	7440-42-8
V	0 - 0.1	7440-62-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 5

L14 ANSWER 5 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 949114-99-2 REGISTRY
ED Entered STN: 03 Oct 2007
CN Aluminum alloy, base, Al 81-97,Mg 3-14,Fe 0-1,Mn 0-1,Cr 0-0.5,Cu 0-0.5,Si 0-0.5,Ti 0-0.5,Zn 0-0.5,V 0-0.3,Zr 0-0.3 (CA INDEX NAME)
OTHER NAMES:
CN Aluminum 81-97, chromium 0-0.5, copper 0-0.5, iron 0-1, magnesium 3-14, manganese 0-1, silicon 0-0.5, titanium 0-0.5, vanadium 0-0.3, zinc 0-0.5, zirconium 0-0.3
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI AYS

SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	81 - 97	7429-90-5
Mg	3 - 14	7439-95-4
Fe	0 - 1	7439-89-6
Mn	0 - 1	7439-96-5
Cr	0 - 0.5	7440-47-3
Cu	0 - 0.5	7440-50-8
Si	0 - 0.5	7440-21-3
Ti	0 - 0.5	7440-32-6
Zn	0 - 0.5	7440-66-6
V	0 - 0.3	7440-62-2
Zr	0 - 0.3	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 6

L14 ANSWER 6 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 936561-06-7 REGISTRY
ED Entered STN: 05 Jun 2007
CN Aluminum alloy, base, Al 86-94,Cu 4.5-7,Mg 1.8-4.5,Mn 0.2-0.8,Co 0-0.4,Fe 0-0.4,Ti 0-0.4,Zr 0-0.4,Si 0-0.2,Be 0-0.1,Ca 0-0.1 (CA INDEX NAME)
MF Al . Be . Ca . Co . Cu . Fe . Mg . Mn . Si . Ti . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	86 - 94	7429-90-5
Cu	4.5 - 7	7440-50-8
Mg	1.8 - 4.5	7439-95-4
Mn	0.2 - 0.8	7439-96-5
Co	0 - 0.4	7440-48-4
Fe	0 - 0.4	7439-89-6
Ti	0 - 0.4	7440-32-6
Zr	0 - 0.4	7440-67-7
Si	0 - 0.2	7440-21-3
Be	0 - 0.1	7440-41-7
Ca	0 - 0.1	7440-70-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 7

L14 ANSWER 7 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 926624-86-4 REGISTRY
ED Entered STN: 16 Mar 2007
CN Aluminum alloy, base, Al 88-96,Mg 3.5-6,Zn 0-1.7,Mn 0.4-1.2,Fe 0-0.5,Li 0-0.5,Sc 0-0.5,Si 0-0.5,Zr 0-0.5,Ag 0-0.4,Cr 0-0.3,Cu 0-0.2,Ti 0-0.2 (CA INDEX NAME)
OTHER NAMES:

```
CN   Aluminum 88-96, chromium 0-0.3, copper 0-0.2, iron 0-0.5, lithium 0-0.5,
     magnesium 3.5-6, manganese 0.4-1.2, scandium 0-0.5, silicon 0-0.5, silver
     0-0.4, titanium 0-0.2, zinc 0-1.7, zirconium 0-0.5
MF   Ag . Al . Cr . Cu . Fe . Li . Mg . Mn . Sc . Si . Ti . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS
```

Component	Component Percent	Component Registry Number
Al	88 - 96	7429-90-5
Mg	3.5 - 6	7439-95-4
Zn	0 - 1.7	7440-66-6
Mn	0.4 - 1.2	7439-96-5
Fe	0 - 0.5	7439-89-6
Li	0 - 0.5	7439-93-2
Sc	0 - 0.5	7440-20-2
Si	0 - 0.5	7440-21-3
Zr	0 - 0.5	7440-67-7
Ag	0 - 0.4	7440-22-4
Cr	0 - 0.3	7440-47-3
Cu	0 - 0.2	7440-50-8
Ti	0 - 0.2	7440-32-6

```
             1 REFERENCES IN FILE CA (1907 TO DATE)
             1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l14 8

L14  ANSWER 8 OF 32  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   918789-28-3  REGISTRY
ED   Entered STN:  30 Jan 2007
CN   Aluminum alloy, base, Al 81-98,Zn 1.4-8.4,Mg 0.3-4,Cu 0.1-3,Mn 0.1-0.9,Si
     0.1-0.8,Fe 0.1-0.7,Cr 0.1-0.4,Zr 0-0.3,Ni 0-0.2,Ti 0-0.2  (CA INDEX NAME)
OTHER NAMES:
CN   Aluminum 81-98, chromium 0.1-0.4, copper 0.1-3, iron 0.1-0.7, magnesium
     0.3-4, manganese 0.1-0.9, nickel 0-0.2, silicon 0.1-0.8, titanium 0-0.2,
     zinc 1.4-8.4, zirconium 0-0.3
MF   Al . Cr . Cu . Fe . Mg . Mn . Ni . Si . Ti . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS
```

Component	Component Percent	Component Registry Number
Al	81 - 98	7429-90-5
Zn	1.4 - 8.4	7440-66-6
Mg	0.3 - 4	7439-95-4
Cu	0.1 - 3	7440-50-8
Mn	0.1 - 0.9	7439-96-5
Si	0.1 - 0.8	7440-21-3
Fe	0.1 - 0.7	7439-89-6
Cr	0.1 - 0.4	7440-47-3
Zr	0 - 0.3	7440-67-7
Ni	0 - 0.2	7440-02-0
Ti	0 - 0.2	7440-32-6

```
             1 REFERENCES IN FILE CA (1907 TO DATE)
             1 REFERENCES IN FILE CAPLUS (1907 TO DATE)
```

=> d l14 9

L14 ANSWER 9 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 902164-07-2 REGISTRY
ED Entered STN: 17 Aug 2006
CN Aluminum alloy, base, Al 90-95,Mg 4.2-6.5,Mn 0.5-1.2,Fe 0-0.3,Sc 0-0.3,Zr 0-0.3,Cr 0-0.2,Si 0-0.2,Ti 0-0.2,Zn 0-0.2,Ce 0-0.1,Cu 0-0.1,Nd 0-0.1,Y 0-0.1 (9CI) (CA INDEX NAME)
MF Al . Ce . Cr . Cu . Fe . Mg . Mn . Nd . Sc . Si . Ti . Y . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	90 - 95	7429-90-5
Mg	4.2 - 6.5	7439-95-4
Mn	0.5 - 1.2	7439-96-5
Fe	0 - 0.3	7439-89-6
Sc	0 - 0.3	7440-20-2
Zr	0 - 0.3	7440-67-7
Cr	0 - 0.2	7440-47-3
Si	0 - 0.2	7440-21-3
Ti	0 - 0.2	7440-32-6
Zn	0 - 0.2	7440-66-6
Ce	0 - 0.1	7440-45-1
Cu	0 - 0.1	7440-50-8
Nd	0 - 0.1	7440-00-8
Y	0 - 0.1	7440-65-5

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 10

L14 ANSWER 10 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 886758-22-1 REGISTRY
ED Entered STN: 05 Jun 2006
CN Aluminum alloy, base, Al 92-96,Mg 3.5-5,Mn 0-0.8,Zn 0-0.6,Fe 0-0.4,Cr 0-0.3,Zr 0-0.3,Cu 0-0.2,Si 0-0.2,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	92 - 96	7429-90-5
Mg	3.5 - 5	7439-95-4
Mn	0 - 0.8	7439-96-5
Zn	0 - 0.6	7440-66-6
Fe	0 - 0.4	7439-89-6
Cr	0 - 0.3	7440-47-3
Zr	0 - 0.3	7440-67-7
Cu	0 - 0.2	7440-50-8
Si	0 - 0.2	7440-21-3
Ti	0 - 0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 11

L14 ANSWER 11 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 851905-53-8 REGISTRY
ED Entered STN: 08 Jun 2005
CN Aluminum alloy, base, Al 80-98,Mg 1-8,Si 1-4,Cu 0-1,Mn 0-0.8,Fe 0-0.6,Er 0-0.5,Gd 0-0.5,Hf 0-0.5,Mo 0-0.5,Nb 0-0.5,Sc 0-0.5,Tb 0-0.5,V 0-0.5,Zr 0-0.5,Cr 0-0.3,Ti 0-0.2,Zn 0-0.1 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Er . Fe . Gd . Hf . Mg . Mn . Mo . Nb . Sc . Si . Tb . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	80 - 98	7429-90-5
Mg	1 - 8	7439-95-4
Si	1 - 4	7440-21-3
Cu	0 - 1	7440-50-8
Mn	0 - 0.8	7439-96-5
Fe	0 - 0.6	7439-89-6
Er	0 - 0.5	7440-52-0
Gd	0 - 0.5	7440-54-2
Hf	0 - 0.5	7440-58-6
Mo	0 - 0.5	7439-98-7
Nb	0 - 0.5	7440-03-1
Sc	0 - 0.5	7440-20-2
Tb	0 - 0.5	7440-27-9
V	0 - 0.5	7440-62-2
Zr	0 - 0.5	7440-67-7
Cr	0 - 0.3	7440-47-3
Ti	0 - 0.2	7440-32-6
Zn	0 - 0.1	7440-66-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 12

L14 ANSWER 12 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 833466-05-0 REGISTRY
ED Entered STN: 18 Feb 2005
CN Aluminum alloy, base, Al 94-96,Mg 3-3.5,Mn 0.5-1,Ti 0-0.5,Zr 0.1-0.4,Fe 0-0.2,Si 0-0.2,Cu 0-0.1 (9CI) (CA INDEX NAME)
MF Al . Cu . Fe . Mg . Mn . Si . Ti . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	94 - 96	7429-90-5
Mg	3 - 3.5	7439-95-4

	Mn	0.5	-	1	7439-96-5
	Ti	0	-	0.5	7440-32-6
	Zr	0.1	-	0.4	7440-67-7
	Fe	0	-	0.2	7439-89-6
	Si	0	-	0.2	7440-21-3
	Cu	0	-	0.1	7440-50-8

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 13

L14 ANSWER 13 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 749250-15-5 REGISTRY
ED Entered STN: 22 Sep 2004
CN Aluminum alloy, base, Al 90-98,Mg 2-6,Mn 0-1,Fe 0-0.7,Cu 0-0.6,Si 0-0.5,Zn 0-0.5,Cr 0-0.4,Zr 0-0.3,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	90	-	98	7429-90-5
Mg	2	-	6	7439-95-4
Mn	0	-	1	7439-96-5
Fe	0	-	0.7	7439-89-6
Cu	0	-	0.6	7440-50-8
Si	0	-	0.5	7440-21-3
Zn	0	-	0.5	7440-66-6
Cr	0	-	0.4	7440-47-3
Zr	0	-	0.3	7440-67-7
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 14

L14 ANSWER 14 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 627892-61-9 REGISTRY
ED Entered STN: 19 Dec 2003
CN Aluminum alloy, base, Al 94,Mg 4,Mn 1,Zr 0.3,Fe 0.2,Si 0.2,Ti 0.2 (9CI) (CA INDEX NAME)
MF Al . Fe . Mg . Mn . Si . Ti . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	94	7429-90-5
Mg	4	7439-95-4
Mn	1	7439-96-5
Zr	0.3	7440-67-7
Fe	0.2	7439-89-6
Si	0.2	7440-21-3

```
    Ti          0.2          7440-32-6


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l14 15

L14  ANSWER 15 OF 32  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   528578-87-2  REGISTRY
ED   Entered STN:  10 Jun 2003
CN   Aluminum alloy, base, Al 89-98,Mg 2-6,Mn 0-1.5,B 0-0.5,Fe 0-0.5,Si
     0-0.5,Ti 0-0.5,Cr 0-0.4,Zn 0-0.4,Zr 0-0.4,Cu 0-0.2 (9CI)  (CA INDEX NAME)
MF   Al . B . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+===============
    Al       89  -  98        7429-90-5
    Mg        2  -   6         7439-95-4
    Mn        0  -   1.5       7439-96-5
    B         0  -   0.5       7440-42-8
    Fe        0  -   0.5       7439-89-6
    Si        0  -   0.5       7440-21-3
    Ti        0  -   0.5       7440-32-6
    Cr        0  -   0.4       7440-47-3
    Zn        0  -   0.4       7440-66-6
    Zr        0  -   0.4       7440-67-7
    Cu        0  -   0.2       7440-50-8

                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> d l14 16

L14  ANSWER 16 OF 32  REGISTRY  COPYRIGHT 2008 ACS on STN
RN   527685-44-5  REGISTRY
ED   Entered STN:  09 Jun 2003
CN   Aluminum alloy, base, Al 80-96,Zn 3.5-7.5,Fe 0-5.5,Mg 0.5-4,Mn 0-0.8,B
     0-0.5,Si 0-0.5,Ti 0-0.5,Cr 0-0.4,Zr 0-0.4,V 0-0.2 (9CI)  (CA INDEX NAME)
MF   Al . B . Cr . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS

Component   Component      Component
              Percent    Registry Number
=========+=============+===============
    Al       80   -  96        7429-90-5
    Zn        3.5 -   7.5       7440-66-6
    Fe        0   -   5.5       7439-89-6
    Mg        0.5 -   4         7439-95-4
    Mn        0   -   0.8       7439-96-5
    B         0   -   0.5       7440-42-8
    Si        0   -   0.5       7440-21-3
```

Ti	0	-	0.5	7440-32-6
Cr	0	-	0.4	7440-47-3
Zr	0	-	0.4	7440-67-7
V	0	-	0.2	7440-62-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 17

L14 ANSWER 17 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 494837-73-9 REGISTRY
ED Entered STN: 26 Feb 2003
CN Aluminum alloy, base, Al 76-99,Si 0.3-10,Mg 0.3-6,Cr 0-1,Cu 0-1,Fe 0-1,Mn 0-1,Ti 0-1,Zn 0-1,Zr 0-1,Ca 0-0.5,Na 0-0.5,Sr 0-0.3 (9CI) (CA INDEX NAME)
MF Al . Ca . Cr . Cu . Fe . Mg . Mn . Na . Si . Sr . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent			Component Registry Number
Al	76	-	99	7429-90-5
Si	0.3	-	10	7440-21-3
Mg	0.3	-	6	7439-95-4
Cr	0	-	1	7440-47-3
Cu	0	-	1	7440-50-8
Fe	0	-	1	7439-89-6
Mn	0	-	1	7439-96-5
Ti	0	-	1	7440-32-6
Zn	0	-	1	7440-66-6
Zr	0	-	1	7440-67-7
Ca	0	-	0.5	7440-70-2
Na	0	-	0.5	7440-23-5
Sr	0	-	0.3	7440-24-6

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 18

L14 ANSWER 18 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 440626-49-3 REGISTRY
ED Entered STN: 29 Jul 2002
CN Aluminum alloy, base, Al 90-96,Mg 2.5-4.5,Si 1-3.5,Mn 0.3-1.5,Zr 0-0.3,Fe 0-0.2,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Fe . Mg . Mn . Si . Ti . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent			Component Registry Number
Al	90	-	96	7429-90-5
Mg	2.5	-	4.5	7439-95-4

Si	1	-	3.5	7440-21-3
Mn	0.3	-	1.5	7439-96-5
Zr	0	-	0.3	7440-67-7
Fe	0	-	0.2	7439-89-6
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 19

L14 ANSWER 19 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 389626-12-4 REGISTRY
ED Entered STN: 05 Feb 2002
CN Aluminum alloy, base, Al 85-100,Mg 0-5,Zn 0-5,Fe 0-1,Mn 0-1,Ni 0-1,Si 0-1,Ti 0-0.3,Zr 0-0.3 (9CI) (CA INDEX NAME)
MF Al . Fe . Mg . Mn . Ni . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	85	-	100	7429-90-5
Mg	0	-	5	7439-95-4
Zn	0	-	5	7440-66-6
Fe	0	-	1	7439-89-6
Mn	0	-	1	7439-96-5
Ni	0	-	1	7440-02-0
Si	0	-	1	7440-21-3
Ti	0	-	0.3	7440-32-6
Zr	0	-	0.3	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 20

L14 ANSWER 20 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 371165-10-5 REGISTRY
ED Entered STN: 20 Nov 2001
CN Aluminum alloy, base, Al 65-95,Zn 2.5-10,Zr 0.2-6.5,Mg 1-6.4,Cr 0.1-2.5,Mn 0.1-2.5,Cu 1-1.7,Si 0-1.5,Fe 0.1-1.2,Ni 0.2-1,B 0.1-1,Ti 0-0.5 (9CI) (CA INDEX NAME)
MF Al . B . Cr . Cu . Fe . Mg . Mn . Ni . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent			Component Registry Number
Al	65	-	95	7429-90-5
Zn	2.5	-	10	7440-66-6
Zr	0.2	-	6.5	7440-67-7
Mg	1	-	6.4	7439-95-4
Cr	0.1	-	2.5	7440-47-3
Mn	0.1	-	2.5	7439-96-5
Cu	1	-	1.7	7440-50-8

Si	0	-	1.5	7440-21-3
Fe	0.1	-	1.2	7439-89-6
Ni	0.2	-	1	7440-02-0
B	0.1	-	1	7440-42-8
Ti	0	-	0.5	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 21

L14 ANSWER 21 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 361484-70-0 REGISTRY
ED Entered STN: 11 Oct 2001
CN Aluminum alloy, base, Al 88-97,Mg 2.7-6,Zn 0.1-1.5,Mn 0.4-1.4,Si 0-1.4,Fe 0-1,Sc 0-0.3,V 0-0.3,Zr 0-0.3,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Fe . Mg . Mn . Sc . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Component	Component Percent			Component Registry Number
Al	88	-	97	7429-90-5
Mg	2.7	-	6	7439-95-4
Zn	0.1	-	1.5	7440-66-6
Mn	0.4	-	1.4	7439-96-5
Si	0	-	1.4	7440-21-3
Fe	0	-	1	7439-89-6
Sc	0	-	0.3	7440-20-2
V	0	-	0.3	7440-62-2
Zr	0	-	0.3	7440-67-7
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 22

L14 ANSWER 22 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 267005-59-4 REGISTRY
ED Entered STN: 26 May 2000
CN Aluminum alloy, base, Al 85-97,Mg 1.5-6,Zn 0.4-5,Mn 0.3-1.4,Fe 0-0.5,Si 0-0.5,Ag 0.4,Cu 0-0.4,Cr 0-0.3,Zr 0-0.3,Ti 0-0.2,V 0-0.2 (9CI) (CA INDEX NAME)
MF Ag . Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent			Component Registry Number
Al	85	-	97	7429-90-5
Mg	1.5	-	6	7439-95-4
Zn	0.4	-	5	7440-66-6
Mn	0.3	-	1.4	7439-96-5
Fe	0	-	0.5	7439-89-6
Si	0	-	0.5	7440-21-3

Ag		0.4		7440-22-4
Cu	0	-	0.4	7440-50-8
Cr	0	-	0.3	7440-47-3
Zr	0	-	0.3	7440-67-7
Ti	0	-	0.2	7440-32-6
V	0	-	0.2	7440-62-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 23

L14 ANSWER 23 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 224648-15-1 REGISTRY
ED Entered STN: 11 Jun 1999
CN Aluminum alloy, base, Al 92-100,Mg 0-5,Mn 0.1-1.6,Si 0-0.5,Zr 0.1-0.4,Sc 0-0.4,Ti 0-0.3,Zn 0.1,Fe 0-0.1 (9CI) (CA INDEX NAME)
MF Al . Fe . Mg . Mn . Sc . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	92	-	100	7429-90-5
Mg	0	-	5	7439-95-4
Mn	0.1	-	1.6	7439-96-5
Si	0	-	0.5	7440-21-3
Zr	0.1	-	0.4	7440-67-7
Sc	0	-	0.4	7440-20-2
Ti	0	-	0.3	7440-32-6
Zn		0.1		7440-66-6
Fe	0	-	0.1	7439-89-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 24

L14 ANSWER 24 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 210692-17-4 REGISTRY
ED Entered STN: 02 Sep 1998
CN Aluminum alloy, base, Al 80-99,Zn 0.8-9.7,Mg 0.1-3.7,Cu 0-2.6,Fe 0.1-1.4,Mn 0-0.8,Si 0.1-0.7,Zr 0-0.5,Cr 0-0.4,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent			Component Registry Number
Al	80	-	99	7429-90-5
Zn	0.8	-	9.7	7440-66-6
Mg	0.1	-	3.7	7439-95-4
Cu	0	-	2.6	7440-50-8
Fe	0.1	-	1.4	7439-89-6
Mn	0	-	0.8	7439-96-5

Si	0.1	-	0.7	7440-21-3
Zr	0	-	0.5	7440-67-7
Cr	0	-	0.4	7440-47-3
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d cost

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
CONNECT CHARGES	5.20	11.51
NETWORK CHARGES	0.78	1.74
SEARCH CHARGES	118.45	204.18
DISPLAY CHARGES	62.00	72.72
FULL ESTIMATED COST	186.43	290.15

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

IN FILE 'REGISTRY' AT 09:57:19 ON 08 SEP 2008

=> d l14 25

L14 ANSWER 25 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 197586-37-1 REGISTRY
ED Entered STN: 20 Nov 1997
CN Aluminum alloy, base, Al 85-95,Mg 4.5-7,Zn 0.4-5,Mn 0.4-1.2,Fe 0-0.5,Si 0-0.5,Cu 0-0.4,Cr 0-0.3,Zr 0-0.3,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Component	Component Percent			Component Registry Number
Al	85	-	95	7429-90-5
Mg	4.5	-	7	7439-95-4
Zn	0.4	-	5	7440-66-6
Mn	0.4	-	1.2	7439-96-5
Fe	0	-	0.5	7439-89-6
Si	0	-	0.5	7440-21-3
Cu	0	-	0.4	7440-50-8
Cr	0	-	0.3	7440-47-3
Zr	0	-	0.3	7440-67-7
Ti	0	-	0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 26

L14 ANSWER 26 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 151789-43-4 REGISTRY
ED Entered STN: 17 Dec 1993
CN Aluminum alloy, base, Al 85-98,Mg 1.5-3.5,Ni 0-3.5,Si 0-2.5,Mn 0-1.8,Fe

0-1.5,Cu 0-0.5,Hf 0-0.5,Cr 0-0.4,Ti 0-0.4,V 0-0.4,Zr 0-0.4 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Hf . Mg . Mn . Ni . Si . Ti . V . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	85 - 98	7429-90-5
Mg	1.5 - 3.5	7439-95-4
Ni	0 - 3.5	7440-02-0
Si	0 - 2.5	7440-21-3
Mn	0 - 1.8	7439-96-5
Fe	0 - 1.5	7439-89-6
Cu	0 - 0.5	7440-50-8
Hf	0 - 0.5	7440-58-6
Cr	0 - 0.4	7440-47-3
Ti	0 - 0.4	7440-32-6
V	0 - 0.4	7440-62-2
Zr	0 - 0.4	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 27

L14 ANSWER 27 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 147978-44-7 REGISTRY
ED Entered STN: 08 Jun 1993
CN Aluminum alloy, base, Al 88-98,Mg 2-6,Cu 0-2,Mn 0-2,Cr 0-1,Zn 0-0.5,Zr 0-0.3,Fe 0-0.2,Si 0-0.2,Ti 0-0.2 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	88 - 98	7429-90-5
Mg	2 - 6	7439-95-4
Cu	0 - 2	7440-50-8
Mn	0 - 2	7439-96-5
Cr	0 - 1	7440-47-3
Zn	0 - 0.5	7440-66-6
Zr	0 - 0.3	7440-67-7
Fe	0 - 0.2	7439-89-6
Si	0 - 0.2	7440-21-3
Ti	0 - 0.2	7440-32-6

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 28

L14 ANSWER 28 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 129703-76-0 REGISTRY
ED Entered STN: 05 Oct 1990

CN Aluminum alloy, base, Al 76-98,Zn 1-12,Mg 0.5-4,Cu 0-3,Mn 0-1,Cr 0-0.5,Fe 0-0.5,Hf 0-0.5,Sc 0-0.5,Si 0-0.5,Ti 0-0.5,Zr 0-0.5,O 0-0.1 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Hf . Mg . Mn . O . Sc . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	76 - 98	7429-90-5
Zn	1 - 12	7440-66-6
Mg	0.5 - 4	7439-95-4
Cu	0 - 3	7440-50-8
Mn	0 - 1	7439-96-5
Cr	0 - 0.5	7440-47-3
Fe	0 - 0.5	7439-89-6
Hf	0 - 0.5	7440-58-6
Sc	0 - 0.5	7440-20-2
Si	0 - 0.5	7440-21-3
Ti	0 - 0.5	7440-32-6
Zr	0 - 0.5	7440-67-7
O	0 - 0.1	17778-80-2

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 29

L14 ANSWER 29 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 129703-72-6 REGISTRY
ED Entered STN: 05 Oct 1990
CN Aluminum alloy, base, Al 76-98,Zn 1-12,Mg 0.5-4,Cu 0-3,Mn 0-1,Cr 0-0.5,Fe 0-0.5,Hf 0-0.5,Sc 0-0.5,Si 0-0.5,Ti 0-0.5,Zr 0-0.5 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Hf . Mg . Mn . Sc . Si . Ti . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	76 - 98	7429-90-5
Zn	1 - 12	7440-66-6
Mg	0.5 - 4	7439-95-4
Cu	0 - 3	7440-50-8
Mn	0 - 1	7439-96-5
Cr	0 - 0.5	7440-47-3
Fe	0 - 0.5	7439-89-6
Hf	0 - 0.5	7440-58-6
Sc	0 - 0.5	7440-20-2
Si	0 - 0.5	7440-21-3
Ti	0 - 0.5	7440-32-6
Zr	0 - 0.5	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 30

L14 ANSWER 30 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 109982-56-1 REGISTRY
ED Entered STN: 22 Aug 1987
CN Aluminum alloy, base, Al 79-100,Cu 0-5,Mg 0-5,Zn 0-5,Mn 0-1.5,Si 0-1.2,Fe 0-1,Cr 0-0.5,Ti 0-0.5,V 0-0.5,Zr 0-0.5 (9CI) (CA INDEX NAME)
MF Al . Cr . Cu . Fe . Mg . Mn . Si . Ti . V . Zn . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	79 - 100	7429-90-5
Cu	0 - 5	7440-50-8
Mg	0 - 5	7439-95-4
Zn	0 - 5	7440-66-6
Mn	0 - 1.5	7439-96-5
Si	0 - 1.2	7440-21-3
Fe	0 - 1	7439-89-6
Cr	0 - 0.5	7440-47-3
Ti	0 - 0.5	7440-32-6
V	0 - 0.5	7440-62-2
Zr	0 - 0.5	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 31

L14 ANSWER 31 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 100100-19-4 REGISTRY
ED Entered STN: 08 Feb 1986
CN Aluminum alloy, base, Al 25-97,Mg 0.5-8,Li 2.7-5,Be 0-5,Co 0-5,Cr 0-5,Cu 0-5,Fe 0-5,Hf 0-5,Mn 0-5,Ni 0-5,Sc 0-5,Si 0-5,Ti 0-5,V 0-5,Zr 0.2-2 (9CI) (CA INDEX NAME)
MF Al . Be . Co . Cr . Cu . Fe . Hf . Li . Mg . Mn . Ni . Sc . Si . Ti . V . Zr
CI AYS
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Component	Component Percent	Component Registry Number
Al	25 - 97	7429-90-5
Mg	0.5 - 8	7439-95-4
Li	2.7 - 5	7439-93-2
Be	0 - 5	7440-41-7
Co	0 - 5	7440-48-4
Cr	0 - 5	7440-47-3
Cu	0 - 5	7440-50-8
Fe	0 - 5	7439-89-6
Hf	0 - 5	7440-58-6
Mn	0 - 5	7439-96-5
Ni	0 - 5	7440-02-0
Sc	0 - 5	7440-20-2
Si	0 - 5	7440-21-3
Ti	0 - 5	7440-32-6
V	0 - 5	7440-62-2

Zr	0.2 -	2	7440-67-7

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d l14 32

L14 ANSWER 32 OF 32 REGISTRY COPYRIGHT 2008 ACS on STN
RN 61992-87-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN Aluminum alloy, base, Al 78-89,Zn 7-11,Mg 2.5-4,Cu 1-2.6,Mn 0.2-1.2,Zr 0.1-0.3,B 0-0.3,Cd 0-0.3,Co 0-0.3,Cr 0-0.3,Fe 0-0.3,Si 0-0.3,Ti 0-0.3,V 0-0.3,W 0-0.3,Be 0-0.2,Nb 0-0.2 (9CI) (CA INDEX NAME)
MF Al . B . Be . Cd . Co . Cr . Cu . Fe . Mg . Mn . Nb . Si . Ti . V . W . Zn . Zr
CI AYS
LC STN Files: CA, CAPLUS

Component	Component Percent	Component Registry Number
Al	78 - 89	7429-90-5
Zn	7 - 11	7440-66-6
Mg	2.5 - 4	7439-95-4
Cu	1 - 2.6	7440-50-8
Mn	0.2 - 1.2	7439-96-5
Zr	0.1 - 0.3	7440-67-7
B	0 - 0.3	7440-42-8
Cd	0 - 0.3	7440-43-9
Co	0 - 0.3	7440-48-4
Cr	0 - 0.3	7440-47-3
Fe	0 - 0.3	7439-89-6
Si	0 - 0.3	7440-21-3
Ti	0 - 0.3	7440-32-6
V	0 - 0.3	7440-62-2
W	0 - 0.3	7440-33-7
Be	0 - 0.2	7440-41-7
Nb	0 - 0.2	7440-03-1

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	203.81	307.53

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

FILE 'REGISTRY' ENTERED AT 09:59:05 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1
DICTIONARY FILE UPDATES: 7 SEP 2008 HIGHEST RN 1047406-12-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> SET TERMSET E#

SET COMMAND COMPLETED

=> DEL SEL Y

=> SEL L14 31 RN

E1 THROUGH E1 ASSIGNED

=> S E1/RN

L15   1 100100-19-4/RN

=> SET TERMSET LOGIN

SET COMMAND COMPLETED

=> FIL CAPLUS

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.55	308.08

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

FILE 'CAPLUS' ENTERED AT 09:59:09 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 8 Sep 2008 VOL 149 ISS 11
FILE LAST UPDATED: 7 Sep 2008 (20080907/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

=> S L15

L16   1 L15

=> DIS L16 1 IBIB
THE ESTIMATED COST FOR THIS REQUEST IS 1.21 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L16 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:54985 CAPLUS
DOCUMENT NUMBER: 104:54985
ORIGINAL REFERENCE NO.:   104:8801a,8804a
TITLE: Low-density aluminum alloys
INVENTOR(S):   Skinner, David John; Okazaki, Kenji; Adam, Colin
                          Mclean
PATENT ASSIGNEE(S):   Allied Corp., USA
SOURCE: Eur. Pat. Appl., 28 pp.
                          CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 158769	A1	19851023	EP 1985-100476	19850118
EP 158769	B1	19880504		
R: CH, DE, FR, GB, LI				
US 4661172	A	19870428	US 1984-584856	19840229
CA 1228491	A1	19871027	CA 1985-474001	19850211
JP 60208445	A	19851021	JP 1985-40244	19850228
JP 02036661	B	19900820		
JP 01272742	A	19891031	JP 1988-67998	19880322
PRIORITY APPLN. INFO.:			US 1984-584856 A	19840229

=> file caplus
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.17	310.25

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-1.60

FILE 'CAPLUS' ENTERED AT 10:00:14 ON 08 SEP 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 8 Sep 2008 VOL 149 ISS 11
FILE LAST UPDATED: 7 Sep 2008 (20080907/ED)

Caplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html

```
=> s 1015163-38-8/rn
             1 1015163-38-8
             0 1015163-38-8D
L17          1 1015163-38-8/RN
               (1015163-38-8 (NOTL) 1015163-38-8D )

=> s 1015163-38-8/rn and 528578-87-2/rn and 371165-10-5/rn and 224648-15-1/rn and
109982-56-1/rn
             1 1015163-38-8
             0 1015163-38-8D
             1 1015163-38-8/RN
               (1015163-38-8 (NOTL) 1015163-38-8D )
             1 528578-87-2
             0 528578-87-2D
             1 528578-87-2/RN
               (528578-87-2 (NOTL) 528578-87-2D )
             1 371165-10-5
             0 371165-10-5D
             1 371165-10-5/RN
               (371165-10-5 (NOTL) 371165-10-5D )
             1 224648-15-1
             0 224648-15-1D
             1 224648-15-1/RN
               (224648-15-1 (NOTL) 224648-15-1D )
             1 109982-56-1
             0 109982-56-1D
             1 109982-56-1/RN
               (109982-56-1 (NOTL) 109982-56-1D )
L18          0 1015163-38-8/RN AND 528578-87-2/RN AND 371165-10-5/RN AND 224648
               -15-1/RN AND 109982-56-1/RN

=> s 1015163-38-8/rn OR 528578-87-2/rn OR 371165-10-5/rn OR 224648-15-1/rn OR
109982-56-1/rn
             1 1015163-38-8
             0 1015163-38-8D
             1 1015163-38-8/RN
               (1015163-38-8 (NOTL) 1015163-38-8D )
             1 528578-87-2
             0 528578-87-2D
             1 528578-87-2/RN
               (528578-87-2 (NOTL) 528578-87-2D )
```

```
             1 371165-10-5
             0 371165-10-5D
             1 371165-10-5/RN
                (371165-10-5 (NOTL) 371165-10-5D )
             1 224648-15-1
             0 224648-15-1D
             1 224648-15-1/RN
                (224648-15-1 (NOTL) 224648-15-1D )
             1 109982-56-1
             0 109982-56-1D
             1 109982-56-1/RN
                (109982-56-1 (NOTL) 109982-56-1D )
L19          5 1015163-38-8/RN OR 528578-87-2/RN OR 371165-10-5/RN OR 224648-15
               -1/RN OR 109982-56-1/RN

=> d l19

L19  ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2008:417065  CAPLUS
DN   148:407592
TI   Method for evaluation of stress corrosion cracking (SCC) of aluminum
     alloys and aluminum alloys with excellent resistance to SCC
IN   Sakashita, Shinji; Tanaka, Toshiyuki
PA   Kobe Steel, Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 17pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   JP 2008076297        A      20080403    JP 2006-257531         20060922
PRAI JP 2006-257531               20060922


=> d l19 2

L19  ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2003:391115  CAPLUS
DN   138:389217
TI   Manufacture of aluminum alloy billets by semisolid forging for
     transportation equipments
IN   Mikubo, Shigeru; Mizouchi, Masafumi; Murayama, Yasuyuki; Iwashita, Tsunaki
PA   Kyushu Mitsui Aluminium Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 5 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   JP 2003147497        A      20030521    JP 2001-337404         20011102
     JP 3802796           B2     20060726
PRAI JP 2001-337404               20011102


=> d l19 3

L19  ANSWER 3 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2001:808251  CAPLUS
DN   135:347609
TI   Manufacture of nanosize aluminum alloy powders by attrition milling with a
```

```
     surfactant
IN   Upadhya, Kamleshwar; Hoffman, Wesley P.
PA   United States Dept. of the Air Force, USA
SO   U.S., 6 pp.
     CODEN: USXXAM
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    -------------------    --------
PI   US 6312643           B1    20011106    US 1997-957013         19971024
PRAI US 1997-957013              19971024
RE.CNT  8     THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> d l19 4

L19  ANSWER 4 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   1999:344803  CAPLUS
DN   130:355579
TI   Pressure-cast aluminum alloy structural parts
IN   Winkler, Reinhard; Wust, Jurgen
PA   Alusuisse Technology & Management AG, Switz.; Alcan Technology &
     Management AG
SO   Eur. Pat. Appl., 6 pp.
     CODEN: EPXXDW
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    -------------------    --------
PI   EP 918095            A1    19990526    EP 1997-810884         19971120
     EP 918095            B1    20030326
          R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
              IE, SI, LT, LV, FI, RO
     PT 918095            T     20030630    PT 1997-810884         19971120
     ES 2192257           T3    20031001    ES 1997-810884         19971120
     HU 9802626           A1    19990928    HU 1998-2626           19981112
     HU 220128            B     20011128
     PL 186936            B1    20040430    PL 1998-329760         19981118
     BR 9804709           A     19991109    BR 1998-4709           19981119
PRAI EP 1997-810884       A     19971120
RE.CNT  4     THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> d l19 5

L19  ANSWER 5 OF 5  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   1987:501308  CAPLUS
DN   107:101308
OREF 107:16460h,16461a
TI   Metallic gasket
IN   Sakai, Yakichi
PA   Nippon Gakki Co., Ltd., Japan; Hamamatsu Gasket Seisakusho Ltd.
SO   Ger. Offen., 7 pp.
     CODEN: GWXXBX
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
```

```
     ---------------     ----   --------    --------------------   --------
PI   DE 3633988          A1     19870416    DE 1986-3633988        19861006
     DE 3633988          C2     19900613
     US 4810591          A      19890307    US 1986-916293         19861007
PRAI JP 1985-224777      A      19851011


=> logoff
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                      66.13     376.38

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)            SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00      -1.60

STN INTERNATIONAL LOGOFF AT 10:16:55 ON 08 SEP 2008


Connecting via Winsock to STN



Welcome to STN International!  Enter x:X

LOGINID:ssptamls1742

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2


* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1          Web Page for STN Seminar Schedule - N. America
 NEWS  2  NOV 21  CAS patent coverage to include exemplified prophetic
                  substances identified in English-, French-, German-,
                  and Japanese-language basic patents from 2004-present
 NEWS  3  NOV 26  MARPAT enhanced with FSORT command
 NEWS  4  NOV 26  CHEMSAFE now available on STN Easy
 NEWS  5  NOV 26  Two new SET commands increase convenience of STN
                  searching
 NEWS  6  DEC 01  ChemPort single article sales feature unavailable
 NEWS  7  DEC 12  GBFULL now offers single source for full-text
                  coverage of complete UK patent families
 NEWS  8  DEC 17  Fifty-one pharmaceutical ingredients added to PS
 NEWS  9  JAN 06  The retention policy for unread STNmail messages
                  will change in 2009 for STN-Columbus and STN-Tokyo
 NEWS 10  JAN 07  WPIDS, WPINDEX, and WPIX enhanced Japanese Patent
                  Classification Data
 NEWS 11  FEB 02  Simultaneous left and right truncation (SLART) added
                  for CERAB, COMPUAB, ELCOM, and SOLIDSTATE
 NEWS 12  FEB 02  GENBANK enhanced with SET PLURALS and SET SPELLING
 NEWS 13  FEB 06  Patent sequence location (PSL) data added to USGENE
 NEWS 14  FEB 10  COMPENDEX reloaded and enhanced
 NEWS 15  FEB 11  WTEXTILES reloaded and enhanced
 NEWS 16  FEB 19  New patent-examiner citations in 300,000 CA/CAplus
                  patent records provide insights into related prior
                  art
```

```
NEWS 17  FEB 19  Increase the precision of your patent queries -- use
                 terms from the IPC Thesaurus, Version 2009.01
NEWS 18  FEB 23  Several formats for image display and print options
                 discontinued in USPATFULL and USPAT2
NEWS 19  FEB 23  MEDLINE now offers more precise author group fields
                 and 2009 MeSH terms
NEWS 20  FEB 23  TOXCENTER updates mirror those of MEDLINE - more
                 precise author group fields and 2009 MeSH terms
NEWS 21  FEB 23  Three million new patent records blast AEROSPACE into
                 STN patent clusters
NEWS 22  FEB 25  USGENE enhanced with patent family and legal status
                 display data from INPADOCDB
NEWS 23  MAR 06  INPADOCDB and INPAFAMDB enhanced with new display
                 formats
NEWS 24  MAR 11  EPFULL backfile enhanced with additional full-text
                 applications and grants
NEWS 25  MAR 11  ESBIOBASE reloaded and enhanced
NEWS 26  MAR 20  CAS databases on STN enhanced with new super role
                 for nanomaterial substances
NEWS 27  MAR 23  CA/CAplus enhanced with more than 250,000 patent
                 equivalents from China
NEWS 28  MAR 30  IMSPATENTS reloaded and enhanced

NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3,
             AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.

NEWS HOURS     STN Operating Hours Plus Help Desk Availability
NEWS LOGIN     Welcome Banner and News Items
NEWS IPC8      For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that
specific topic.

  All use of STN is subject to the provisions of the STN customer
  agreement.  This agreement limits use to scientific research.  Use
  for software development or design, implementation of commercial
  gateways, or use of CAS and STN data in the building of commercial
  products is prohibited and may result in loss of user privileges
  and other penalties.

* * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 09:04:29 ON 30 MAR 2009

=> file registry
COST IN U.S. DOLLARS                                 SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.22       0.22

FILE 'REGISTRY' ENTERED AT 09:04:47 ON 30 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   27 MAR 2009  HIGHEST RN 1128305-29-2
DICTIONARY FILE UPDATES:  27 MAR 2009  HIGHEST RN 1128305-29-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.
```

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

```
=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 70-100 Al/mac
        184935 3.5-4.5/MAC
         82170 MG/MAC
          5622 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        430489 0.8-1.5/MAC
        395965 MN/MAC
        138266 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        643943 70-100/MAC
        270098 AL/MAC
         82453 70-100 AL/MAC
                 (70-100/MAC (P) AL/MAC)
L1          687 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 70-100 AL/MAC

=> s l1 and (silicon or si) and (iron or fe)
        112104 SILICON
        477617 SI
         16367 SIS
        493822 SI
                 (SI OR SIS)
        642234 IRON
        671421 FE
           426 FES
        671828 FE
                 (FE OR FES)
L2          376 L1 AND (SILICON OR SI) AND (IRON OR FE)

=> s 3.5-4.5 Mg/mac and 0.8-1.5 Mn/mac and 70-100 Al/mac and 0-0.5 Fe/mac and 0-0.5
Si/mac
        184935 3.5-4.5/MAC
         82170 MG/MAC
          5622 3.5-4.5 MG/MAC
                 (3.5-4.5/MAC (P) MG/MAC)
        430489 0.8-1.5/MAC
        395965 MN/MAC
        138266 0.8-1.5 MN/MAC
                 (0.8-1.5/MAC (P) MN/MAC)
        643943 70-100/MAC
        270098 AL/MAC
         82453 70-100 AL/MAC
                 (70-100/MAC (P) AL/MAC)
        543376 0-0.5/MAC
        562021 FE/MAC
         47574 0-0.5 FE/MAC
                 (0-0.5/MAC (P) FE/MAC)
        543376 0-0.5/MAC
        423505 SI/MAC
        222028 0-0.5 SI/MAC
                 (0-0.5/MAC (P) SI/MAC)
```

```
L3          268 3.5-4.5 MG/MAC AND 0.8-1.5 MN/MAC AND 70-100 AL/MAC AND 0-0.5
                FE/MAC AND 0-0.5 SI/MAC

=> s l3 and (titanium or ti) and (zirconium or zr)
        204066 TITANIUM
        255410 TI
         55143 TIS
        310553 TI
                (TI OR TIS)
        114282 ZIRCONIUM
        123063 ZR
             2 ZRS
        123065 ZR
                (ZR OR ZRS)
L4           62 L3 AND (TITANIUM OR TI) AND (ZIRCONIUM OR ZR)

=> file (hcaplus, inspec, aluminium, compendex, confsci, corrosion, ema, epfull,
gbfull, mdf, metadex, scisearch, uspatall)
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               89.44      89.66

FILE 'HCAPLUS' ENTERED AT 09:09:19 ON 30 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 30 Mar 2009  VOL 150 ISS 14
FILE LAST UPDATED: 29 Mar 2009  (20090329/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s l4
L5          110 L4

=> dup rem l5
PROCESSING COMPLETED FOR L5
L6           110 DUP REM L5 (0 DUPLICATES REMOVED)

=> s l6 and (aluminum or aluminium)
L7          110 S L6
       1088426 ALUMINUM
            312 ALUMINUMS
```

```
       1088490 ALUMINUM
                  (ALUMINUM OR ALUMINUMS)
         17807 ALUMINIUM
            36 ALUMINIUMS
         17836 ALUMINIUM
                  (ALUMINIUM OR ALUMINIUMS)
L8         109 L7 AND (ALUMINUM OR ALUMINIUM)

=> d scan l8

L8    109 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC    56-3 (Nonferrous Metals and Alloys)
TI    Aluminum-based alloy for aviation and shipbuilding
ST    aluminum magnesium manganese alloy armor aviation
IT    Aerospace industry
         (aviation and aeronautics; aluminum-based alloy for aviation
         and shipbuilding)
IT    Armor
         (plate; aluminum-based alloy for aviation and shipbuilding)
IT    902164-10-7 902164-12-9   902164-15-2   902164-18-5
      RL: PRP (Properties); TEM (Technical or engineered material use); USES
      (Uses)
         (aluminum armor alloy; aluminum-based alloy for
         aviation and shipbuilding)
IT    902164-07-2
      RL: TEM (Technical or engineered material use); USES (Uses)
         (aluminum armor alloy; aluminum-based alloy for
         aviation and shipbuilding)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L8    109 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC    56-9 (Nonferrous Metals and Alloys)
TI    CO2 laser welding of aluminium shipbuilding industry alloys. AA
      5083, AA 5383, AA 5059, and AA 6082
ST    aluminum alloy laser welding
IT    Microstructure
         (CO2 laser welding of Al shipbuilding industry alloys)
IT    Welding of metals
         (laser; CO2 laser welding of Al shipbuilding industry alloys)
IT    12616-86-3, AA 5083   12732-13-7, AA 6082   269058-32-4, AA 5059
      327622-69-5, AA 5383
      RL: CPS (Chemical process); PEP (Physical, engineering or chemical
      process); TEM (Technical or engineered material use); PROC (Process); USES
      (Uses)
         (CO2 laser welding of Al shipbuilding industry alloys)
IT    124-38-9, Carbon dioxide, uses
      RL: NUU (Other use, unclassified); USES (Uses)
         (CO2 laser welding of Al shipbuilding industry alloys)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L8    109 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC    56-12 (Nonferrous Metals and Alloys)
TI    Features of superplastic deformation of some aluminum alloys
ST    superplastic deformation aluminum alloy
IT    Plastic deformation
         (superplastic; features of superplastic deformation of aluminum
         alloys)
IT    12672-17-2, D20   39331-96-9, D19   39461-63-7, AA7475 81159-87-7
      , AMg4   110414-16-9, Neopral
      RL: PEP (Physical, engineering or chemical process); PRP (Properties);
```

PROC (Process)
(features of superplastic deformation of aluminum alloys)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L8 109 ANSWERS HCAPLUS COPYRIGHT 2009 ACS on STN
CC 56-9 (Nonferrous Metals and Alloys)
TI Properties of AlZn4.5Mg1 joints welded with different filler materials
ST welding aluminum alloy filler metal property
IT Welding
Welds
(properties of AlZn4.5Mg1 joints welded with different filler materials)
IT 12616-87-4 37268-39-6, SG-AlMg5 75686-78-1
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(filler metal; properties of AlZn4.5Mg1 joints welded with different filler materials)
IT 12675-83-1, AlZn4.5Mg1
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(properties of AlZn4.5Mg1 joints welded with different filler materials)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L8 109 ANSWERS HCAPLUS COPYRIGHT 2009 ACS on STN
IC ICM C22F001-04
ICS C22F001-053; C22C021-10
CC 56-11 (Nonferrous Metals and Alloys)
TI Processing of nonrecrystallized aluminum alloy sheets and plates.
ST aluminum alloy plate sheet processing; heat treatment aluminum alloy
IT Aluminum alloy, base
RL: USES (Uses)
(processing of nonrecrystd., for toughness)
IT 129703-71-5, Aluminum 87, copper 1.5, magnesium 1.8, zinc 10, zirconium 0.1 129703-72-6 129703-73-7 129703-74-8 129703-75-9 129703-76-0
RL: USES (Uses)
(processing of nonrecrystd., for toughness)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L8 109 ANSWERS HCAPLUS COPYRIGHT 2009 ACS on STN
CC 56-11 (Nonferrous Metals and Alloys)
TI Al-Mg alloy suitable for armor plate applications
ST aluminum magnesium alloy rolling annealing strength corrosion armor plate
IT Annealing
Casting of metals
Cold rolling
Homogenization
Metalworking
(Al-Mg alloy product suitable for armor plate applications)
IT Rolling (metals)
(hot; Al-Mg alloy product suitable for armor plate applications)
IT Armor
(plate, military; Al-Mg alloy product suitable for armor plate applications)
IT Heating

```
       (preheating; Al-Mg alloy product suitable for armor plate applications)
IT   951323-60-7 1047982-87-5
     RL: PEP (Physical, engineering or chemical process); TEM (Technical or
     engineered material use); PROC (Process); USES (Uses)
        (Al-Mg alloy product suitable for armor plate applications)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> e toyoda yusuke/au,in
E1            1     TOYODA YUMIKO/AU
E2            5     TOYODA YURIKO/AU
E3           14 --> TOYODA YUSUKE/AU
E4            5     TOYODA YUSUKE/IN
E5            3     TOYODA YUTA/AU
E6           77     TOYODA YUTAKA/AU
E7            5     TOYODA YUTAKA/IN
E8            1     TOYODA YUUJI/AU
E9            3     TOYODA YUUJIRO/AU
E10           1     TOYODA YUUJIROU/AU
E11           1     TOYODA YUUJIROU/IN
E12           1     TOYODA YUUSUKE/AU

=> s e3-e4
             14 "TOYODA YUSUKE"/AU
              5 "TOYODA YUSUKE"/IN
L9           14 ("TOYODA YUSUKE"/AU OR "TOYODA YUSUKE"/IN)

=> e mizukami takahiro/au,in
E1            8     MIZUKAMI TAKAAKI/AU
E2            6     MIZUKAMI TAKAAKI/IN
E3            2 --> MIZUKAMI TAKAHIRO/AU
E4            1     MIZUKAMI TAKAHIRO/IN
E5            8     MIZUKAMI TAKAO/AU
E6            6     MIZUKAMI TAKAO/IN
E7            2     MIZUKAMI TAKASHI/AU
E8            5     MIZUKAMI TAKAYOSHI/AU
E9            5     MIZUKAMI TAKAYOSHI/IN
E10           4     MIZUKAMI TAKAYUKI/AU
E11          17     MIZUKAMI TAKESHI/AU
E12           5     MIZUKAMI TAKEYUKI/AU

=> s e3-e4
              2 "MIZUKAMI TAKAHIRO"/AU
              1 "MIZUKAMI TAKAHIRO"/IN
L10           2 ("MIZUKAMI TAKAHIRO"/AU OR "MIZUKAMI TAKAHIRO"/IN)

=> e fukuchi fumiaka/au,in
E1           36     FUKUCHI ETSUO/AU
E2           36     FUKUCHI ETSUO/IN
E3            0 --> FUKUCHI FUMIAKA/AU
E4            0     FUKUCHI FUMIAKA/IN
E5           14     FUKUCHI FUMIAKI/AU
E6           12     FUKUCHI FUMIAKI/IN
E7            6     FUKUCHI FUMIHIKO/AU
E8            1     FUKUCHI FUMIO/AU
E9            1     FUKUCHI FUMIO/IN
E10           1     FUKUCHI FUSAICHI/AU
E11           1     FUKUCHI FUSATOSHI/AU
E12           1     FUKUCHI FUSAYASU/AU

=> s e5-e6
             14 "FUKUCHI FUMIAKI"/AU
```

```
            12 "FUKUCHI FUMIAKI"/IN
L11         14 ("FUKUCHI FUMIAKI"/AU OR "FUKUCHI FUMIAKI"/IN)

=> e hata tsunehisa/au,in
E1         262     HATA TSUJIAKI/AU
E2          23     HATA TSUJIAKI/IN
E3           5 --> HATA TSUNEHISA/AU
E4           5     HATA TSUNEHISA/IN
E5           1     HATA TSUNEO/AU
E6           1     HATA TSUNEO/IN
E7           1     HATA TSURU/AU
E8           1     HATA TSURU/IN
E9           1     HATA TSUTOMU/AU
E10          1     HATA TSUTOMU/IN
E11         16     HATA TSUYOSHI/AU
E12          9     HATA TSUYOSHI/IN

=> s e3-e4
             5 "HATA TSUNEHISA"/AU
             5 "HATA TSUNEHISA"/IN
L12          5 ("HATA TSUNEHISA"/AU OR "HATA TSUNEHISA"/IN)

=> e shibata katsuhiro/au,in
E1          27     SHIBATA KATSUHIKO/AU
E2          25     SHIBATA KATSUHIKO/IN
E3         133 --> SHIBATA KATSUHIRO/AU
E4          78     SHIBATA KATSUHIRO/IN
E5           4     SHIBATA KATSUHISA/AU
E6           1     SHIBATA KATSUI/AU
E7           1     SHIBATA KATSUI/IN
E8         146     SHIBATA KATSUJI/AU
E9         126     SHIBATA KATSUJI/IN
E10         14     SHIBATA KATSUKI/AU
E11         12     SHIBATA KATSUKI/IN
E12          4     SHIBATA KATSUMASA/AU

=> s e3-e4
           133 "SHIBATA KATSUHIRO"/AU
            78 "SHIBATA KATSUHIRO"/IN
L13        133 ("SHIBATA KATSUHIRO"/AU OR "SHIBATA KATSUHIRO"/IN)

=> s (l9 or l10 or l11 or l12 or l13)
L14        159 (L9 OR L10 OR L11 OR L12 OR L13)

=> dup rem l14
PROCESSING COMPLETED FOR L14
L15        159 DUP REM L14 (0 DUPLICATES REMOVED)

=> d scan l15

L15   159 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
IC    ICM  G01N021-64
      ICS  G01N021-05; G01N021-15; G01N021-53; G01N021-59
TI    Seaweed density measurement system. [Machine Translation].

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L15   159 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC    11F (Biological Chemistry: Physiology)
TI    Thyroid uptake of iodine-131. IV. Effect of the removal of some endocrine
      glands and of corticoid replacement
IT    Thymus gland
```

```
       (in iodine-131 metabolism by thyroid)
IT   Hormones
       (sex, I metabolism by thyroid and)
IT   Corticosteroids
       (thyroid metabolic response to)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L15   159 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
IC   ICM  H01L027-148
     ICS  H01L021-339; H01L029-762; H04N005-335
TI   Electric charge transfer device and solid-state image sensing device
     [Machine Translation].

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L15   159 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC   72 (Hormones and Related Substances)
TI   Emergence of infection in rats after administration of corticosteroids. I.
     Symptoms, autopsy findings, and bacteriological observations
IT   Corynebacterium pseudotuberculosis
     Corynebacterium pseudotuberculosis
       (antibiotic sensitivity of)
IT   Infections
     Infections
       (corticosteroid-lowering of resistance to)
IT   Corticosteroids
       (infection resistance lowering by)
IT   Antibiotic substances
       (Corynebacterium pseudotuberculosis sensitivity to)
IT   50-23-7, Cortisol
       (infection activation by)
IT   50-02-2, Pregna-1,4-diene-3,20-dione,
     9-fluoro-11β,17,21-trihydroxy-16α-methyl-   50-22-6,
     Corticosterone   50-24-8, Pregna-1,4-diene-3,20-dione,
     11β,17,21-trihydroxy-   53-06-5, Cortisone   124-94-7,
     Pregna-1,4-diene-3,20-dione, 9-fluoro-11β,16α,17,21-
     tetrahydroxy-   127-31-1, Pregn-4-ene-3,20-dione,
     9-fluoro-11β,17,21-trihydroxy-   302-25-0,
     Pregna-1,4-diene-3,20-dione, 11β,17,21-trihydroxy-(prednisolone),
     phosphate
       (infection resistance lowering by)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l15 and (aluminium or aluminum or al) and (alloy or die casting or die-casting
or casting)
L16        159 S L15
          17807 ALUMINIUM
             36 ALUMINIUMS
          17836 ALUMINIUM
                  (ALUMINIUM OR ALUMINIUMS)
        1088426 ALUMINUM
            312 ALUMINUMS
        1088490 ALUMINUM
                  (ALUMINUM OR ALUMINUMS)
        1060837 AL
           6931 ALS
        1067419 AL
                  (AL OR ALS)
         747215 ALLOY
         560056 ALLOYS
```

```
        933573 ALLOY
                  (ALLOY OR ALLOYS)
         91168 DIE
         22194 DIES
          1630 DICE
           150 DICES
        101211 DIE
                  (DIE OR DIES OR DICE OR DICES)
        164042 CASTING
         34741 CASTINGS
        177263 CASTING
                  (CASTING OR CASTINGS)
          7552 DIE CASTING
                  (DIE(W)CASTING)
         91168 DIE
         22194 DIES
          1630 DICE
           150 DICES
        101211 DIE
                  (DIE OR DIES OR DICE OR DICES)
        164042 CASTING
         34741 CASTINGS
        177263 CASTING
                  (CASTING OR CASTINGS)
          7552 DIE-CASTING
                  (DIE(W)CASTING)
        164042 CASTING
         34741 CASTINGS
        177263 CASTING
                  (CASTING OR CASTINGS)
L17           31 L16 AND (ALUMINIUM OR ALUMINUM OR AL) AND (ALLOY OR DIE CASTING
                  OR DIE-CASTING OR CASTING)

=> d scan l17

L17   31 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
IC    ICM  C22C021-02
      ICS  B22D021-04; B22D029-00; C22F001-043; C22F001-00
CC    56-2 (Nonferrous Metals and Alloys)
TI    High-toughness aluminum alloy casting and
      its production method
ST    high toughness aluminum alloy casting
IT    Casting of metals
      Tensile strength
      Toughness
      Yield strength
         (high-toughness aluminum alloy casting
         and its production method)
IT    870462-24-1   870462-25-2   870462-26-3   870462-27-4   870462-28-5
      870462-29-6   870462-30-9
      RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
      (Physical process); PROC (Process)
         (high-toughness aluminum alloy casting
         and its production method)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L17   31 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
IC    ICM  C22C021-02
      ICS  B22D017-00; C22C001-02
CC    56-2 (Nonferrous Metals and Alloys)
TI    Manufacture of Al-Si alloy cast having high toughness
```

and stress corrosion cracking resistance
ST aluminum silicon alloy casting toughness
stress corrosion cracking resistance
IT Casting of metals
Impact strength
(manufacture of Al-Si alloy cast having high toughness
and stress corrosion cracking resistance)
IT Stress corrosion cracking
(resistance; manufacture of Al-Si alloy cast having high
toughness and stress corrosion cracking resistance)
IT 804566-20-9P 804566-22-1P 804566-25-4P
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical
process); PYP (Physical process); PREP (Preparation); PROC (Process)
(manufacture of Al-Si alloy cast having high toughness
and stress corrosion cracking resistance)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L17 31 ANSWERS HCAPLUS COPYRIGHT 2009 ACS on STN
IC ICM B22D017-00
ICS B22C009-06; B22D017-22; C22C021-06
CC 56-2 (Nonferrous Metals and Alloys)
TI Die-cast aluminum-magnesium alloy products having ribs
ST die casting aluminum magnesium alloy
product rib
IT Casting of metals
(die; die-cast Al-Mg alloy products having ribs
with high strength and toughness)
IT 607356-70-7 607356-71-8 607356-72-9 607356-73-0 607356-74-1
607356-75-2 607356-76-3 607356-77-4 607356-78-5 607356-79-6
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); TEM (Technical or engineered material use); PROC (Process); USES
(Uses)
(die-cast Al-Mg alloy products having ribs with
high strength and toughness)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L17 31 ANSWERS HCAPLUS COPYRIGHT 2009 ACS on STN
IC ICM C09K003-14
ICS C09K003-14; C08J005-14; F16D069-02
CC 57-9 (Ceramics)
TI Fiber-reinforced frictional materials having improved wear resistance
ST fiber reinforced friction material; brake pad friction material
IT Polyamide fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aramid; wear-resistant friction materials containing)
IT Cashew (Anacardium occidentale)
(dust; wear-resistant friction materials containing)
IT Brakes (mechanical)
(linings; wear-resistant friction materials for)
IT Carbon fibers, uses
Phenolic resins, uses
Synthetic fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(wear-resistant friction materials containing)
IT Friction materials
(wear-resistant friction materials reinforced with fibers)
IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-02-0,
Nickel, uses 7440-47-3, Chromium, uses 7440-50-8, Copper, uses
7440-66-6, Zinc, uses 7782-42-5, Graphite, uses 11143-56-9
12597-68-1, Stainless steel, uses

```
     RL: TEM (Technical or engineered material use); USES (Uses)
        (wear-resistant friction materials containing)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L17   31 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC   56-2 (Nonferrous Metals and Alloys)
TI   Aluminum alloys for mushy-state casting of
     automotive chassis
ST   aluminum silicon alloy casting cooling
     automobile chassis
IT   Casting of metals
     Cooling
        (aluminum alloys for mushy-state casting
        of automotive chassis)
IT   Cast alloys
     RL: DEV (Device component use); USES (Uses)
        (aluminum; aluminum alloys for
        mushy-state casting of automotive chassis)
IT   Automobiles
        (chassis; aluminum alloys for mushy-state
        casting of automotive chassis)
IT   11145-29-2   12609-50-6, Aluminum 97, silicon 3   12686-71-4
     12727-35-4
     RL: DEV (Device component use); PEP (Physical, engineering or chemical
     process); PYP (Physical process); PROC (Process); USES (Uses)
        (aluminum alloys for mushy-state casting
        of automotive chassis)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s (l8 or l17)
L18        139 (L8 OR L17)

=> dup rem l18
PROCESSING COMPLETED FOR L18
L19         139 DUP REM L18 (0 DUPLICATES REMOVED)

=> d cost
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CONNECT CHARGES                                        36.14      39.57
NETWORK CHARGES                                         0.91       1.54
SEARCH CHARGES                                          0.00      85.60
                                                      -------    -------
FULL ESTIMATED COST                                    37.05     126.71

IN FILE 'HCAPLUS' AT 09:16:52 ON 30 MAR 2009


=> s l19 and (magnesium or mg) and (manganese or mn) and (titanium or zirconium)
L20        139 S L19
        552337 MAGNESIUM
            91 MAGNESIUMS
        552372 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
       1548880 MG
          1729 MGS
       1550063 MG
                  (MG OR MGS)
        420771 MANGANESE
           116 MANGANESES
```

```
        420783 MANGANESE
                  (MANGANESE OR MANGANESES)
        456674 MN
          5539 MNS
        459951 MN
                  (MN OR MNS)
        569677 TITANIUM
            82 TITANIUMS
        569686 TITANIUM
                  (TITANIUM OR TITANIUMS)
        238488 ZIRCONIUM
            23 ZIRCONIUMS
        238491 ZIRCONIUM
                  (ZIRCONIUM OR ZIRCONIUMS)
L21          12 L20 AND (MAGNESIUM OR MG) AND (MANGANESE OR MN) AND (TITANIUM
                OR ZIRCONIUM)

=> s l19 and (magnesium or mg) and (manganese or mn)
L22         139 S L19
        552337 MAGNESIUM
            91 MAGNESIUMS
        552372 MAGNESIUM
                  (MAGNESIUM OR MAGNESIUMS)
       1548880 MG
          1729 MGS
       1550063 MG
                  (MG OR MGS)
        420771 MANGANESE
           116 MANGANESES
        420783 MANGANESE
                  (MANGANESE OR MANGANESES)
        456674 MN
          5539 MNS
        459951 MN
                  (MN OR MNS)
L23          54 L22 AND (MAGNESIUM OR MG) AND (MANGANESE OR MN)

=> d scan l23

L23   54 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
IC    ICM  B23K035-28
CC    56-9 (Nonferrous Metals and Alloys)
TI    Cored wire electrode for the joint welding of high-strength
      aluminum alloys
ST    cored wire electrode joint welding aluminum alloy; welding light
      metal aerospace industry cored wire electrode; automobile light metal
      construction cored wire electrode welding
IT    Aerospace industry
         (aviation and aeronautics; cored wire electrode for the joint welding
         of high-strength aluminum alloys applied for)
IT    Automobiles
         (cored wire electrode for the joint welding of high-strength
         aluminum alloys applied for)
IT    Welding of metals
         (flux-cored arc, electrodes; for the joint welding of high-strength
         aluminum alloys)
IT    841260-31-9   841260-32-0 841260-33-1
      RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
      engineering or chemical process); PROC (Process); USES (Uses)
         (cored wire electrode for the joint welding of high-strength
         aluminum alloys)
IT    11145-78-1, AlMg3Mn   12616-86-3, AlMg4.5Mn0.7   12720-80-8, AlMg4
```

```
     37202-63-4, AlMg4.5Mn0.4
     RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,
     engineering or chemical process); PROC (Process); USES (Uses)
        (filler material for cored wire electrode for the joint welding of
        high-strength aluminum alloys)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> d scan l21

L21   12 ANSWERS   HCAPLUS  COPYRIGHT 2009 ACS on STN
CC    56-13 (Nonferrous Metals and Alloys)
TI    XRFS determination of 10 alloying elements in superhard aluminum
      alloys
ST    alloying element aluminum alloy compn
IT    7439-89-6, Iron, analysis   7439-95-4, Magnesium, analysis
      7439-96-5, Manganese, analysis   7440-02-0, Nickel, analysis
      7440-21-3, Silicon, analysis   7440-32-6, Titanium, analysis
      7440-47-3, Chromium, analysis   7440-66-6, Zinc, analysis   7440-67-7,
      Zirconium, analysis
      RL: ANT (Analyte); ANST (Analytical study)
         (XRFS determination of 10 alloying elements in superhard aluminum
         alloys)
IT    918789-28-3, Aluminum 81-98, chromium 0.1-0.4, copper
      0.1-3, iron 0.1-0.7, magnesium 0.3-4, manganese
      0.1-0.9, nickel 0-0.2, silicon 0.1-0.8, titanium 0-0.2, zinc
      1.4-8.4, zirconium 0-0.3
      RL: NUU (Other use, unclassified); USES (Uses)
         (sample; XRFS determination of 10 alloying elements in superhard
         aluminum alloys)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l19 and (aluminum or aluminium) and (alloy or casting or die-casting)
L24         139 S L19
        1088426 ALUMINUM
            312 ALUMINUMS
        1088490 ALUMINUM
                   (ALUMINUM OR ALUMINUMS)
          17807 ALUMINIUM
             36 ALUMINIUMS
          17836 ALUMINIUM
                   (ALUMINIUM OR ALUMINIUMS)
         747215 ALLOY
         560056 ALLOYS
         933573 ALLOY
                   (ALLOY OR ALLOYS)
         164042 CASTING
          34741 CASTINGS
         177263 CASTING
                   (CASTING OR CASTINGS)
          91168 DIE
          22194 DIES
           1630 DICE
            150 DICES
         101211 DIE
                   (DIE OR DIES OR DICE OR DICES)
         164042 CASTING
          34741 CASTINGS
         177263 CASTING
                   (CASTING OR CASTINGS)
           7552 DIE-CASTING
```

```
                (DIE(W)CASTING)
L25         139 L24 AND (ALUMINUM OR ALUMINIUM) AND (ALLOY OR CASTING OR DIE-CAS
                TING)

=> s l24 and high toughness
       4576285 HIGH
           665 HIGHS
       4576666 HIGH
                 (HIGH OR HIGHS)
         88073 TOUGHNESS
           549 TOUGHNESSES
         88190 TOUGHNESS
                 (TOUGHNESS OR TOUGHNESSES)
          6608 HIGH TOUGHNESS
                 (HIGH(W)TOUGHNESS)
L26           7 L24 AND HIGH TOUGHNESS

=> d 126

L26  ANSWER 1 OF 7  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   2006:122425  HCAPLUS
DN   144:175087
TI   Aluminum alloys for mushy-state casting of
     automotive chassis
IN   Minakami, Takahiro; Toyota, Yusuke; Shibata, Katsuhiro;
     Murakata, Ryoichi
PA   Honda Motor Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 13 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   JP 2006037190        A     20060209    JP 2004-221225         20040729
PRAI JP 2004-221225             20040729


=> 1
1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> d l26

L26  ANSWER 1 OF 7  HCAPLUS  COPYRIGHT 2009 ACS on STN
AN   2006:122425  HCAPLUS
DN   144:175087
TI   Aluminum alloys for mushy-state casting of
     automotive chassis
IN   Minakami, Takahiro; Toyota, Yusuke; Shibata, Katsuhiro;
     Murakata, Ryoichi
PA   Honda Motor Co., Ltd., Japan
SO   Jpn. Kokai Tokkyo Koho, 13 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   JP 2006037190        A     20060209    JP 2004-221225         20040729
```

PRAI JP 2004-221225 20040729

=> d l26 2

L26 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:1285265 HCAPLUS
DN 144:25687
TI High toughness aluminum alloy cast for automobile parts
IN Toyota, Yusuke; Shibata, Katsuhiro; Minakami, Takahiro; Murakashi, Ryoichi
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005336569	A	20051208	JP 2004-158760	20040528
	JP 4238181	B2	20090311		
PRAI	JP 2004-158760		20040528		

=> d l26 3

L26 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:1283373 HCAPLUS
DN 144:25665
TI High-toughness aluminum alloy casting and its production method
IN Toyota, Yusuke; Shibata, Katsuhiro; Minakami, Takahiro; Murakashi, Ryoichi
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005336568	A	20051208	JP 2004-158757	20040528
	JP 4238180	B2	20090311		
PRAI	JP 2004-158757		20040528		

=> d l26 4

L26 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:586890 HCAPLUS
DN 143:101204
TI Cast aluminum alloys with high toughness and their manufacture
IN Toyota, Yusuke; Minakami, Takahiro; Shibata, Katsuhiro
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	JP 2005177791	A	20050707	JP 2003-420405	20031218
PRAI	JP 2003-420405		20031218		

=> d 126 5

L26 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2004:1125675 HCAPLUS
DN 142:60742
TI Aluminum-silicon-base alloy cast products with high toughness and stress corrosion cracking resistance and their manufacture
IN Nakamura, Takeyoshi; Shibata, Katsuhiro
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004359988	A	20041224	JP 2003-157903	20030603
	JP 4092255	B2	20080528		
PRAI	JP 2003-157903		20030603		

=> d 126 6

L26 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2004:1058568 HCAPLUS
DN 142:42199
TI Manufacture of Al-Si alloy cast having high toughness and stress corrosion cracking resistance
IN Nakamura, Takeyoshi; Shibata, Katsuhiro; Minakami, Takahiro
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004346408	A	20041209	JP 2003-147850	20030526
PRAI	JP 2003-147850		20030526		

=> d 126 7

L26 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2009 ACS on STN
AN 2003:972274 HCAPLUS
DN 140:7577
TI Die casting having high toughness
IN Toyoda, Yusuke; Mizukami, Takahiro; Fukuchi, Fumiaki; Hata, Tsunehisa; Shibata, Katsuhiro
PA Honda Giken Kogyo Kabushiki Kaisha, Japan
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

```
     -------------      ----   --------    -------------------   --------
PI   WO 2003102257       A1    20031211    WO 2003-JP5993         20030514
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
           CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
           GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
           LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH,
           PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
           UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
        RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
           KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
           FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
           BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     JP 2003342664        A     20031203    JP 2002-157329         20020530
     JP 4092138           B2    20080528
     JP 2004001010        A     20040108    JP 2002-157328         20020530
     JP 4210473           B2    20090121
     AU 2003235302        A1    20031219    AU 2003-235302         20030514
     EP 1508627           A1    20050223    EP 2003-723374         20030514
        R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
            IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
     US 20060137848       A1    20060629    US 2005-518151         20050927
PRAI JP 2002-157328       A     20020530
     JP 2002-157329       A     20020530
     WO 2003-JP5993       W     20030514
RE.CNT  5     THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> d l26 7 it st cc

L26  ANSWER 7 OF 7  HCAPLUS  COPYRIGHT 2009 ACS on STN
IT   Casting of metals
     Toughness
        (die casting having high
        toughness of aluminum-magnesium alloy)
IT   116658-27-6   627892-55-1 627892-56-2   627892-57-3
     627892-58-4 627892-59-5 627892-60-8
     627892-61-9   627892-62-0
     RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP
     (Physical process); PROC (Process)
        (die casting having high
        toughness of aluminum-magnesium alloy)
ST   aluminum magnesium alloy die casting
     high toughness
CC   56-2 (Nonferrous Metals and Alloys)


=> FIL REGISTRY

COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY     SESSION
FULL ESTIMATED COST                                    67.38      157.04

FILE 'REGISTRY' ENTERED AT 09:21:27 ON 30 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   27 MAR 2009  HIGHEST RN 1128305-29-2
```

```
DICTIONARY FILE UPDATES:  27 MAR 2009  HIGHEST RN 1128305-29-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> S 116658-27-6/RN

L27           1 116658-27-6/RN

=> SET NOTICE 1 DISPLAY

NOTICE SET TO 1 U.S. DOLLAR FOR DISPLAY COMMAND
SET COMMAND COMPLETED

=> D L27 SQIDE 1-

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y
THE ESTIMATED COST FOR THIS REQUEST IS 6.85 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:y

L27  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2009 ACS on STN
RN   116658-27-6  REGISTRY
CN   Aluminum alloy, base, Al 98,Mg 1,Mn 1,Fe 0.2,Si 0.2 (9CI)  (CA INDEX NAME)
MF   Al . Fe . Mg . Mn . Si
CI   AYS
SR   CA
LC   STN Files:   CA, CAPLUS, USPATFULL
DT.CA  CAplus document type:  Patent
RL.P   Roles from patents:  MSC (Miscellaneous); PROC (Process); PRP
       (Properties); USES (Uses)

Component    Component      Component
               Percent    Registry Number
=========+=============+===============
    Al          98           7429-90-5
    Mg           1           7439-95-4
    Mn           1           7439-96-5
    Fe           0.2         7439-89-6
    Si           0.2         7440-21-3


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

               4 REFERENCES IN FILE CA (1907 TO DATE)
               4 REFERENCES IN FILE CAPLUS (1907 TO DATE)


=> SET NOTICE LOGIN DISPLAY

NOTICE SET TO OFF  FOR DISPLAY COMMAND
SET COMMAND COMPLETED
```

```
=>

=> s l19 and (toughness or die-casting or casting or manganese or mn or magnesium
or mg)
L19 CANNOT BE SEARCHED IN REGISTRY
The L-number cannot be used because it does not contain a query.
Enter DISPLAY HISTORY to see the sequence of commands that created
this L-number.

=> file (hcaplus, inspec, aluminium, compendex, confsci, corrosion, ema, epfull,
gbfull, mdf, metadex, scisearch, uspatall)
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                                 3.49     160.53

FILE 'HCAPLUS' ENTERED AT 09:23:11 ON 30 MAR 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 30 Mar 2009  VOL 150 ISS 14
FILE LAST UPDATED: 29 Mar 2009  (20090329/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the third quarter of 2008.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> s l19 and (toughness or die-casting or casting or manganese or mn or magnesium
or mg)
L28         139 S L19
          88073 TOUGHNESS
            549 TOUGHNESSES
          88190 TOUGHNESS
                (TOUGHNESS OR TOUGHNESSES)
          91168 DIE
          22194 DIES
           1630 DICE
            150 DICES
         101211 DIE
                (DIE OR DIES OR DICE OR DICES)
         164042 CASTING
          34741 CASTINGS
         177263 CASTING
                (CASTING OR CASTINGS)
```

```
          7552 DIE-CASTING
                 (DIE(W)CASTING)
        164042 CASTING
         34741 CASTINGS
        177263 CASTING
                 (CASTING OR CASTINGS)
        420771 MANGANESE
           116 MANGANESES
        420783 MANGANESE
                 (MANGANESE OR MANGANESES)
        456674 MN
          5539 MNS
        459951 MN
                 (MN OR MNS)
        552337 MAGNESIUM
            91 MAGNESIUMS
        552372 MAGNESIUM
                 (MAGNESIUM OR MAGNESIUMS)
       1548880 MG
          1729 MGS
       1550063 MG
                 (MG OR MGS)
L29           96 L28 AND (TOUGHNESS OR DIE-CASTING OR CASTING OR MANGANESE OR MN
                 OR MAGNESIUM OR MG)

=> dup rem l29
PROCESSING COMPLETED FOR L29
L30           96 DUP REM L29 (0 DUPLICATES REMOVED)

=> d l30 1-96 ibib, abs it

L30  ANSWER 1 OF 96  HCAPLUS  COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER:         2009:52639  HCAPLUS
DOCUMENT NUMBER:          150:103298
TITLE:                    Aluminum-magnesium-silicon alloy
                          sheets for warm forming, and their manufacture
INVENTOR(S):              Kudo, Takeshi; Matsumoto, Katsushi; Ariga, Yasuhiro
PATENT ASSIGNEE(S):       Kobe Steel, Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 22pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
     JP 2009007617        A     20090115    JP 2007-169220         20070627
PRIORITY APPLN. INFO.:                      JP 2007-169220         20070627
AB   The Al alloy sheets contain Mg 0.57-4.5 and Si 0.33-2.5 weight% by
     satisfying condition A for Mg 0.57-3.8 weight% and (0.578 +
     Mg) ≤Si ≤[(0.578 +  Mg) + 0.3] and
     condition B for Mg 0.57-4.5 weight% and Si 0.33-2.2 weight% and
     [(0.578 + Mg) - 0.4] ≤Si ≤[(0.578 +
     Mg)] and have texture showing average total area ratio 20-65% for Cube
     orientation, Brass orientation, S orientation, and Cu orientation, average
     area ratio for Cube orientation 5-15%, and average grain size 10-50 μm.
     Optionally, the Al alloy sheets contain (1) Cu 0.05-0.5 and/or (2) Fe
     ≤1.5, Ti ≤0.2,  Mn ≤1.0, Cr ≤0.5, Zr
     ≤0.5, V ≤0.3, and Zn ≤1.5 weight%.  The sheets are
     manufactured by casting Al alloy ingots containing the above compns. and
     having thickness ≤100 mm, homogenizing, hot rolling for draft
```

≤92%, and then cold rolling for draft ≤92% to give
≤2.0 mm thickness.

IT Rolling (metals)
(hot; manufacture of aluminum-magnesium-silicon alloy sheets for warm forming)

IT Casting of metals
Cold rolling
Homogenization
Texture (metallographic)
(manufacture of aluminum-magnesium-silicon alloy sheets for warm forming)

IT 39299-11-1 53208-42-7 71045-22-2 1095751-97-5 1095751-98-6 1095751-99-7 1095752-00-3
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of aluminum-magnesium-silicon alloy sheets for warm forming)

L30 ANSWER 2 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:1244978 HCAPLUS
DOCUMENT NUMBER: 149:476259
TITLE: Method for producing aluminum alloy thick plate and aluminum alloy thick plate
INVENTOR(S): Kobayashi, Kazunori; Tokuda, Kenji; Kato, Tomoharu; Inaba, Takashi
PATENT ASSIGNEE(S): Kabushiki Kaisha Kobe Seiko Sho, Japan
SOURCE: PCT Int. Appl., 105pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008123355	A1	20081016	WO 2008-JP55873	20080327
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
JP 2008255371	A	20081023	JP 2007-95419	20070330
JP 4231529	B2	20090304		
JP 2008255372	A	20081023	JP 2007-95423	20070330
JP 4231530	B2	20090304		
JP 2008255411	A	20081023	JP 2007-98495	20070404
JP 4242429	B2	20090325		

PRIORITY APPLN. INFO.:

JP 2007-95419	A	20070330
JP 2007-95423	A	20070330
JP 2007-98495	A	20070404

AB Disclosed is a method for producing an aluminum alloy thick plate, which is characterized by sequentially performing, in the following order, a melting step wherein an aluminum alloy consisting of a predetd. amount of Mg, at least one of Si, Fe, Cu, Mn, Cr, Zn, Ti and Zr, and the balance of Al and unavoidable impurities; a

hydrogen gas removing step wherein a hydrogen gas is removed from the melted aluminum alloy; a filtering step wherein inclusions are removed from the aluminum alloy from which a hydrogen gas is removed; a casting step wherein an ingot is produced by casting the aluminum alloy from which inclusions are removed; a slicing step wherein an aluminum alloy thick plate having a predetd. thickness is produced by slicing the ingot; and a heat treatment step wherein the aluminum alloy thick plate having a predetd. thickness is heat-treated by being maintained at a temperature not less than 400°C but less than the m.p. for 1 or more hours.

IT Casting of metals
Dehydrogenation
Filtration
Grain size
Heat treatment
Melting
Nonmetallic inclusions
Tensile strength
Yield strength
(method for producing aluminum alloy thick plate and aluminum alloy thick plate)

IT 12616-83-0, Aa5052 12616-86-3, Aa5083 114323-24-9 122208-88-2
138315-49-8 151975-38-1 261381-04-8 910535-43-2 958460-57-6
958460-65-6 958460-66-7 1071140-51-6 1071140-57-2 1071140-62-9
1071140-65-2 1071140-69-6 1071140-73-2 1071140-78-7 1071140-81-2
1071140-86-7 1071140-91-4 1071141-00-8 1071141-04-2 1071141-07-5
1071141-10-0 1071141-14-4 1071141-16-6 1071141-18-8 1071141-21-3
1071141-30-4 1071141-35-9 1071141-39-3 1071141-43-9 1071141-52-0
1071141-55-3 1071141-58-6 1071141-67-7 1071141-68-8
1071141-71-3
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(method for producing aluminum alloy thick plate and aluminum alloy thick plate)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 3 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:1005642 HCAPLUS
DOCUMENT NUMBER: 149:272995
TITLE: Al-Mg alloy suitable for armor plate applications
INVENTOR(S): Kroepfl, Ingo Guenther; Moritz, Claus Juergen; Moldenhauer, Stefan
PATENT ASSIGNEE(S): Aleris Aluminum Koblenz G.m.b.H., Germany
SOURCE: PCT Int. Appl., 21pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008098743	A1	20080821	WO 2008-EP1070	20080212
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM,				

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2007-889386P P 20070212

AB An aluminum alloy plate has improved resistance against incoming kinetic energy projectiles, the plate having a gauge of 10 mm or more and the aluminum alloy has a chemical composition including, in weight percent: Mg 4.0-6.0, Mn 0.2-1.4, Zn 0.9 maximum, Zr< 0.3, Cr< 0.3, Sc< 0.5, Ti< 0.3, Fe< 0.5, Si< 0.45, Ag< 0.4, Cu<0.25, other elements and unavoidable impurities each <0.05, total <0.20, balance aluminum , and where the alloy plate is obtained by a manufacturing process including casting, preheating and/or homogenization, hot rolling, a first cold working operation, an annealing treatment at <350°, followed by a second cold working operation.

IT Annealing
Casting of metals
Cold rolling
Homogenization
Metalworking
(Al-Mg alloy product suitable for armor plate applications)

IT Rolling (metals)
(hot; Al-Mg alloy product suitable for armor plate applications)

IT Armor
(plate, military; Al-Mg alloy product suitable for armor plate applications)

IT Heating
(preheating; Al-Mg alloy product suitable for armor plate applications)

IT 951323-60-7 1047982-87-5
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Al-Mg alloy product suitable for armor plate applications)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 4 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:1009631 HCAPLUS
DOCUMENT NUMBER: 149:250704
TITLE: Hot-rolled aluminum-magnesium alloy plates and method for their manufacture
INVENTOR(S): Kajiwara, Katsura
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008190021	A	20080821	JP 2007-28291	20070207

PRIORITY APPLN. INFO.: JP 2007-28291 20070207

AB Claimed are 1.5-10 mm-thick Al-Mg alloy plates containing ≥3 and <5 weight% Mg and having average grain size of ≤50 μm, both at the plate surfaces and at the plate center. The sheets may also contain Mn ≤1.0, Fe ≤0.5, Si ≤0.5, Cr ≤0.4, Zn ≤0.5, Zr ≤0.3, Cu ≤0.6, Ti 0.005-0.2,

and/or B 0.0001-0.05 weight%. Method for manufacture of the plates includes rough
hot rolling of soaked ingot and final finish hot rolling at
250-400° under >50% draft and certain strain rate. The thus
manufactured plates are especially suitable for use in automobile, ships, electronic
appliances,.
IT Grain size
(hot rolling of Al-Mg alloys for preparation of plates with
limited grain size)
IT Rolling (metals)
(hot; hot rolling of Al-Mg alloys for preparation of plates with
limited grain size)
IT 12686-54-3 141296-66-4 1045685-45-7 1045685-50-4
RL: PEP (Physical, engineering or chemical process); TEM (Technical or
engineered material use); PROC (Process); USES (Uses)
(hot rolling of Al-Mg alloys for preparation of plates with
limited grain size)
IT 7440-42-8, Boron, uses
RL: MOA (Modifier or additive use); USES (Uses)
(microalloying element; hot rolling of Al-Mg alloys for
preparation of plates with limited grain size)

L30 ANSWER 5 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:934507 HCAPLUS
DOCUMENT NUMBER: 149:229185
TITLE: Aluminum alloy sheets and method for their manufacture
INVENTOR(S): Kudo, Takeshi; Matsumoto, Katsushi; Ariga, Yasuhiro
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 20pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008179838	A	20080807	JP 2007-12116	20070123
PRIORITY APPLN. INFO.:			JP 2007-12116	20070123

AB The title Al alloy sheet consists of 0.57-4.5 weight% Mg, 0.33-2.5 weight% Si, and balance Al under satisfaction of (A) 0.578Mg ≤ Si ≤ 0.578Mg + 0.3, when Mg = 0.57-3.8, or (B) 0.578Mg - 0.4 ≤ Si < 0.578Mg, when Mg = 0.57-4.5 and Si = 0.33-2.2 (the element symbols indicate their weight% contents), and contains 1-5 area% of total of Mg-Si compds. and Si ppts., in which the ratio of Si precipitate therein is ≤1.0. Optionally, the alloys also contain Fe ≤1.5, Mn ≤1.0, Cr ≤0.5, Zr ≤0.5, V ≤0.3, Ti ≤0.2, Zn ≤1.5, and/or Cu ≤1.5 weight%.
Method for manufacture of the sheet includes cast preparation of an ingot having the above given. chemical compns., homogenization, hot rolling within 20 min after finishing the homogenization step, cold rolling, and solution heat treatment. The sheets have high strength and excellent formability and are suitable for vehicles, machineries, constructions, etc.
IT Precipitates
(Mg Si compds.; manufacture of Al-Mg-Si alloy sheets with formability and strength)
IT Rolling (metals)
(hot; manufacture of Al-Mg-Si alloy sheets with formability and strength)

IT Casting of metals
Cold rolling
Homogenization
(manufacture of Al-Mg-Si alloy sheets with formability and strength)
IT Heat treatment
(solution; manufacture of Al-Mg-Si alloy sheets with formability and strength)
IT 39299-11-1 53208-42-7 71045-22-2 96300-79-7 121439-01-8
201218-44-2 1043448-34-5 1043448-36-7 1043448-37-8 1043448-38-9
1043448-39-0
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of Al-Mg-Si alloy sheets with formability and strength)
IT 7440-21-3, Silicon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(precipitate; manufacture of Al-Mg-Si alloy sheets with formability and strength)

L30 ANSWER 6 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:417065 HCAPLUS
DOCUMENT NUMBER: 148:407592
TITLE: Method for evaluation of stress corrosion cracking (SCC) of aluminum alloys and aluminum alloys with excellent resistance to SCC
INVENTOR(S): Sakashita, Shinji; Tanaka, Toshiyuki
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008076297	A	20080403	JP 2006-257531	20060922

PRIORITY APPLN. INFO.: JP 2006-257531 20060922
AB The title process is carried out by determination of the anode polarization curve of Al alloys in an aqueous 5.8 weight% NaCl solution of pH 10 and 30° by 3-electrode method and evaluation of SCC from the average slope of the elec. current/elec. potential under c.d. of 1-10 A/cm2. Al-Mg-Si alloys with the said slope of average value ≤350 Ω-1.m-2 are also claimed. Preferably, the alloys consist of Mg 0.30-5.0, Si 0.20-2.0, Cu 0.01-2.0, Mn 0.01-1.0, Fe 0.01-1.0, Cr 0.01-2.0, Zn 0.005-10.0, optionally Ti 0.001-0.5, B 0.0001-0.05 Nb 0.01-1.0, Zr 0.01-1.0, and/or V 0.01-1.0 weight%, and balance Al.
IT Stress corrosion cracking
Testing of materials
(evaluation of stress corrosion cracking of Al-Mg-Si alloys and those with excellent stress corrosion cracking resistance)
IT 152677-74-2 333799-16-9 1015163-31-1 1015163-32-2 1015163-33-3
1015163-34-4 1015163-35-5 1015163-36-6 1015163-37-7
1015163-38-8
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(evaluation of stress corrosion cracking of Al-Mg-Si alloys and those with excellent stress corrosion cracking resistance)
IT 7440-42-8, Boron, uses

RL: MOA (Modifier or additive use); USES (Uses)
(microalloying element; evaluation of stress corrosion cracking of Al-Mg-Si alloys and those with excellent stress corrosion cracking resistance)

L30 ANSWER 7 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:91482 HCAPLUS
DOCUMENT NUMBER: 148:173393
TITLE: Aluminum alloys containing nanocomposite phases
INVENTOR(S): Hung, Wei-Peng; Chen, Chien-Tong
PATENT ASSIGNEE(S): Advanced Material Specialty Inc., Taiwan; Nelson Precision Casting Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 10pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008013826	A	20080124	JP 2006-187815	20060707

PRIORITY APPLN. INFO.: JP 2006-187815 20060707

AB The title alloy has a chemical composition contain Mn 1.1-7.0, Mg 0.1-6.0, and Sc 0.01-1.5 weight% and includes long cylindrical nanocomposite phases. Optionally, the alloys also contain Si 0.01-0.5, Fe 0.01-0.10, Cu 0.01-0.50, Cr 0.01-0.50, Ni 0.01-0.50, Ti 0.01-0.1, V 0.01-0.1, Co 0.01-0.1, Zn 0.01-0.1, Zr 0.01-0.1, Nb 0.01-0.1, Mo 0.01-0.1, Y 0.01-0.1, W 0.01-0.1, and/or La 0.01-0.1 weight%. The alloys are especially suitable for golf club heads and golf club shafts.

IT Nanocomposites
(Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)
IT Microstructure
(columnar nanocomposite; Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)
IT Sporting goods
(golf club heads; Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)
IT Sporting goods
(golf club shafts; Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)
IT Shafts
(golf-club; Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)
IT 1001846-01-0
RL: TEM (Technical or engineered material use); USES (Uses)
(Al-Mn-Mg-Sc alloys containing nanocomposite phases for golf club heads and shafts)

L30 ANSWER 8 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2008:51647 HCAPLUS
DOCUMENT NUMBER: 148:219699
TITLE: Aluminum alloy having nanometer compound phase for golf clubs
INVENTOR(S): Hong, Weipeng; Chen, Jiantong
PATENT ASSIGNEE(S): Amspec Material Inc., Peop. Rep. China; Fu Sheng Group
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101100716	A	20080109	CN 2006-10090373	20060703

PRIORITY APPLN. INFO.: CN 2006-10090373 20060703

AB The alloy comprises Mn 1.1-7, Mg 0.1-6, Sc 0.01-1.5%, Al bal. The alloy may further contain Si 0.01-0.5, Fe 0.01-0.1, Cu 0.01-0.5, Cr 0.01-0.5, Ni 0.01-0.5, Ti 0.01-0.1, V 0.01-0.1, Co 0.01-0.1, Zn 0.01-0.1, Zr 0.01-0.1, Nb 0.01-0.1, Mo 0.01-0.1, Y 0.01-0.1, W 0.01-0.1, and/or La 0.01-0.1.

IT Phase
(aluminum alloy having nanometer compound phase for golf clubs)

IT Sporting goods
(golf clubs; aluminum alloy having nanometer compound phase for golf clubs)

IT Elongation at break
Microstructure
Tensile strength
Yield strength
(of aluminum alloy having nanometer compound phase for golf clubs)

IT 1001846-01-0, Mn 1.1-7, Mg 0.1-6, Sc 0-1.5, Si 0-0.5, Fe 0-0.1, Cu 0-0.5, Cr 0-0.5, Ni 0-0.5, Ti 0-0.1, V 0-0.1, Co 0-0.1, Zn 0-0.1, Zr 0-0.1, Nb 0-0.1, Mo 0-0.1, Y 0-0.1, W 0-0.1, La 0-0.1, Al bal.
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aluminum alloy having nanometer compound phase for golf clubs)

L30 ANSWER 9 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:1024637 HCAPLUS
DOCUMENT NUMBER: 147:369588
TITLE: Process for manufacturing cast aluminum alloy plate
INVENTOR(S): Morishita, Makoto
PATENT ASSIGNEE(S): Kabushiki Kaisha Kobe Seiko Sho, Japan
SOURCE: PCT Int. Appl., 20pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007102290	A1	20070913	WO 2007-JP52040	20070206
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
JP 2007237237	A	20070920	JP 2006-63050	20060308
JP 4203508	B2	20090107		

AU 2007224070 A1 20070913 AU 2007-224070 20070206
CA 2637276 A1 20070913 CA 2007-2637276 20070206
EP 2011587 A1 20090107 EP 2007-713869 20070206
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS
KR 2008096691 A 20081031 KR 2008-721830 20080905
PRIORITY APPLN. INFO.: JP 2006-63050 A 20060308
WO 2007-JP52040 W 20070206

AB A process for manufacturing a cast aluminum alloy plate, in which even in the twin-roll continuous casting process of an Al-Mg aluminum alloy being wide in solid-liquid coexisting temperature range, there can be attained inhibition of defects in the center region of plate thickness. In the process for manufacturing cast plate of Al-Mg aluminum alloy containing a specified amount of Mg and having a large cast plate thickness according to twin-roll continuous casting technique, continuous casting is carried out while having a specified relationship satisfied by D (m) referring to the roll diameter of twin roll, v (m/s) referring to the circumferential velocity of the twin roll, s (m) referring to the solidification distance being the length of roll circumference from point of starting of contact by molten metal with the roll to kiss point and d (m) referring to the thickness of cast plate as a roll gap at the kiss point.

IT Casting of metals
(continuous; for manufacturing cast aluminum alloy plate)

IT 949114-95-8 949114-96-9 949114-97-0 949114-98-1 949114-99-2
, Aluminum 81-97, chromium 0-0.5, copper 0-0.5, iron 0-1, magnesium 3-14, manganese 0-1, silicon 0-0.5, titanium 0-0.5, vanadium 0-0.3, zinc 0-0.5, zirconium 0-0.3
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(process for manufacturing cast aluminum alloy plate)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 10 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:790072 HCAPLUS
DOCUMENT NUMBER: 147:148324
TITLE: Aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms
INVENTOR(S): Ichitani, Koji; Tagata, Tsutomu; Komatsubara, Toshio; Takata, Ken
PATENT ASSIGNEE(S): Furukawa-Sky Aluminum Corp., Japan; Nippon Steel Corporation
SOURCE: PCT Int. Appl., 48pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007080938	A1	20070719	WO 2007-JP50276	20070111

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,

UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

JP 2007186747	A	20070726	JP 2006-5406		20060112
JP 2007186748	A	20070726	JP 2006-5415		20060112
EP 1975263	A1	20081001	EP 2007-706623		20070111
R: DE, FR, GB, IT					
US 20080257462	A1	20081023	US 2008-171380		20080711
PRIORITY APPLN. INFO.:			JP 2006-5406	A	20060112
			JP 2006-5415	A	20060112
			WO 2007-JP50276	W	20070111

AB An aluminum alloy for high-temperature and high-speed forming contains Mg: 2.0 to 8.0, Mn: 0.05 to 1.0, Zr: 0.01 to 0.3, Si: 0.06 to 0.4, and Fe: 0.06 to 0.4%. The alloy is subjected to forming at 200-550°C and a strain rate of 10-2-10/s and subsequent cooling to room temperature at a rate of ≥20°C/min. In the alloy, Cr-containing intermetallic compds. formed in melting and casting have sizes of ≤20 μm or below and intermetallic compound particles of 50 to 1000 nm are present in an amount of 350,000 particles/mm2 or above as Mn- and Cr-containing ppts.

IT Intermetallic compounds
RL: MOA (Modifier or additive use); USES (Uses)
(Cr-containing; aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms)

IT Cooling
Precipitates
Strain
(aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms)

IT Cast alloys
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum; aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms)

IT Particle size
(intermetallic compds.; aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms)

IT 943736-16-1 943736-17-2 943736-18-3 943736-19-4 943736-20-7
943736-21-8 943736-22-9 943736-23-0 943736-24-1 943736-25-2
943736-27-4 943736-29-6 943736-32-1 943736-34-3 943736-37-6
943736-40-1 943736-42-3 943736-44-5
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aluminum alloys for high-temperature and high-speed forming, processes for production thereof, and process for production of aluminum alloy forms)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 11 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:201658 HCAPLUS
DOCUMENT NUMBER: 146:278835
TITLE: High strength weldable Al-Mg alloy
INVENTOR(S): Telioui, Nadia; Normann, Andrew
PATENT ASSIGNEE(S): Corus Aluminium Walzprodukte G.m.b.H., Germany;

Meijers, Steven Dirk
SOURCE: PCT Int. Appl., 18pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007020041	A2	20070222	WO 2006-EP8030	20060814
WO 2007020041	A3	20070510		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA				
FR 2889852	A1	20070223	FR 2006-7305	20060811
CA 2617528	A1	20070222	CA 2006-2617528	20060814
EP 1917373	A2	20080507	EP 2006-776840	20060814
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
JP 2009504918	T	20090205	JP 2008-526421	20060814
CN 101233252	A	20080730	CN 2006-80028105	20080131
IN 2008CN00756	A	20081128	IN 2008-CN756	20080213
PRIORITY APPLN. INFO.:			EP 2005-76898 A	20050816
			WO 2006-EP8030 W	20060814

AB An aluminum alloy product having high strength, excellent corrosion resistance and weldability, having the following composition in weight%:
Mg 3.5 to 6.0, Mn 0.4 to 1.2, Fe < 0.5, Si < 0.5, Cu < 0.15, Zr < 0.5, Cr < 0.3, Ti 0.03 to 0.2, Sc < 0.5 Zn, < 1.7 Li, < 0.5, and Ag < 0.4, optionally one or more of the following dispersoid forming elements selected from the group consisting of erbium, yttrium, hafnium, vanadium, each < 0.5 wt%, and impurities or incidental elements each < 0.05, total < 0.15 and the balance being aluminum.

IT Tensile strength
Welding of metals
(high strength weldable Al-Mg alloy with excellent corrosion resistance and weldability)

IT Corrosion
(resistance; high strength weldable Al-Mg alloy with excellent corrosion resistance and weldability)

IT 7440-52-0, Erbium, properties 7440-58-6, Hafnium, properties 7440-62-2, Vanadium, properties 7440-65-5, Yttrium, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(dispersoid forming element; high strength weldable Al-Mg alloy with excellent corrosion resistance and weldability)

IT 926624-86-4, Aluminum 88-96, chromium 0-0.3, copper 0-0.2, iron 0-0.5, lithium 0-0.5, magnesium 3.5-6, manganese 0.4-1.2, scandium 0-0.5, silicon 0-0.5, silver 0-0.4, titanium 0-0.2, zinc 0-1.7, zirconium 0-0.5 926624-88-6, Aluminum 91-95, chromium 0-0.1, copper 0-0.2, iron 0-0.5, lithium 0-0.5, magnesium 3.8-4.3, manganese 0.6-0.9, scandium

0.1-0.3, silicon 0-0.5, silver 0-0.4, titanium 0-0.1, zinc 0.4-0.6, zirconium 0-0.2 926624-90-0, Aluminum 91-94, chromium 0-0.1, copper 0-0.2, iron 0-0.5, lithium 0-0.5, magnesium 5-5.6, manganese 0.6-0.9, scandium 0.1-0.3, silicon 0-0.5, silver 0-0.4, titanium 0-0.1, zinc 0.4-0.6, zirconium 0-0.2
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(high strength weldable Al-Mg alloy with excellent corrosion resistance and weldability)

L30 ANSWER 12 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:228052 HCAPLUS
DOCUMENT NUMBER: 146:300424
TITLE: Welded aluminum sheets to improve corrosion resistance
INVENTOR(S): Feng, Frank; Christy, William H.
PATENT ASSIGNEE(S): Can.
SOURCE: U.S. Pat. Appl. Publ., 7pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20070045260	A1	20070301	US 2005-215343	20050830
PRIORITY APPLN. INFO.:			US 2005-215343	20050830

AB An edge of an aluminum 5xxx series sheet is welded to another aluminum 5xxx series sheet utilizing a low magnesium content aluminum alloy filler and GMAW welding technique. The bottom weld seam metal is heat dressed as by a TIG and subsequently the bottom and the top, are planished to the same thickness as the sheets. Favorable properties such as the elimination of nail heads, improved corrosion resistance, and bendability are obtained.
IT Welding of metals
(gas metal-arc; welded aluminum sheets to improve corrosion resistance)
IT Corrosion
(resistance; welded aluminum sheets to improve corrosion resistance)
IT Welding of metals
(welded aluminum sheets to improve corrosion resistance)
IT 11145-78-1, AA5454 12616-83-0, AA5052 12616-86-3, AA5083 12720-80-8, AA5086 65394-05-0, AA5754 259876-44-3, AA5186 327622-69-5, AA5383 661475-83-8, AA5087
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(base metal; welded aluminum sheets to improve corrosion resistance)
IT 37268-39-6, AA5356 55535-47-2, AA1188 113314-85-5
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(filler metal; welded aluminum sheets to improve corrosion resistance)

L30 ANSWER 13 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:550709 HCAPLUS
DOCUMENT NUMBER: 146:505249
TITLE: Al-Cu-Mg alloy for aerospace industry with improved strength under short and long-term elevated temps.

INVENTOR(S): Chirkov, E. F.; Kablov, E. N.; Karimova, S. A.
PATENT ASSIGNEE(S): FGUP "Vserossiiskii Nauchno-Issled. Inst. Aviatsionnykh Materialov", Russia
SOURCE: Russ., 7pp.
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2299256	C1	20070520	RU 2005-140799	20051227

PRIORITY APPLN. INFO.: RU 2005-140799 20051227

AB The invented method relates to aluminum-copper-magnesium system and provides alloy for manufacturing aerospace-destination welded articles capable of working under loadings not only at ambient temps. but also at short and long-term elevated temperature Alloy has following chemical anal., wt %: copper 4.5-7.0, magnesium 1.75-4.5, manganese 0.25-0.8, titanium 0.05-0.45, iron 0.05-0.45, silicon 0.02-0.2, beryllium 0.001-0.07, hydrogen 1.8 + 10-6-3.1 + 10-5, calcium 0.0001-0.08, cobalt 0.02-0.45; at least one of the following elements: nickel 0.001-0.05, chromium 0.001-0.05, or zinc 0.001-0.05; one of the following elements: zirconium 0.055-0.45 or vanadium 0.055-0.45; and aluminum - the balance. The developed deformable aluminum-based alloy and articles made therefrom show good weldability, low hot brittleness, and high strength of welded joint at ambient and elevated temps.

IT Brittle fracture
Welding of metals
(Al-Cu-Mg alloy for aerospace industry with improved strength under short and long-term elevated temps.)

IT 936561-06-7 936561-07-8
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Al-Cu-Mg alloy for aerospace industry with improved strength under short and long-term elevated temps.)

L30 ANSWER 14 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:1293299 HCAPLUS
DOCUMENT NUMBER: 147:526358
TITLE: Friction stir welding process for Al-Si and Al-Mg alloys with dissimilar shear strengths
INVENTOR(S): Fukuchi, Fumiaki; Sayama, Mitsuru; Miyahara, Tetsuya; Ishida, Eiji
PATENT ASSIGNEE(S): Honda Motor Co.,Ltd., Japan
SOURCE: Brit. UK Pat. Appl., 21pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2438063	A	20071114	GB 2007-8741	20070504
GB 2438063	B	20090304		
US 20070280849	A1	20071206	US 2007-789606	20070425

PRIORITY APPLN. INFO.: JP 2006-129595 A 20060508

AB The invention relates to the friction stir welding process for joining two members having different shearing strengths, and friction stir welding

structure fabricated by the process. The friction stir welding process includes positioning the first and second welding members such that both members overlap to define an overlapped region before inserting a rotating pin into the overlapped region from the surface of the second welding member, so that the first and second welding members are joined together. The first welding member (the one furthest from the welding tool) has lower shearing strength than the second welding member. The first and the second welding member may be made of Al-Si alloy, and Al-Mg alloy, resp.

IT Welding of metals
(friction; friction stir welding process for dissimilar metal alloys)

IT 37254-75-4 370070-97-6
RL: TEM (Technical or engineered material use); USES (Uses)
(friction stir welding process for dissimilar metal alloys)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 15 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:1064778 HCAPLUS
DOCUMENT NUMBER: 147:453255
TITLE: Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension
INVENTOR(S): Zhong, Li; Xu, Zhongyan; Nie, Bo; Wu, Xinfeng; Qi, Yanhua; Tao, Zhimin; Wang, Guojun; Li, Guangyu
PATENT ASSIGNEE(S): Northeast Light Alloy Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 9pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101037744	A	20070919	CN 2007-10072154	20070429
PRIORITY APPLN. INFO.:			CN 2007-10072154	20070429

AB The title Al-alloy plate is prepared from (by weight) Si≤0.25%, Fe≤0.25%, Cu≤0.20%, Mn 0.7-1.0%, Mg 4.0-5.2%, Cr 0.25%, Zn≤0.40%, Ti≤0.15%, Zr≤0.20%, and Al in balance by mixing; smelting; ingot casting; homogenization annealing at 450-480° for 35 h; hot rolling at 450-480°; cold rolling; and stabilizing at 80-100° for 6 h. The prepared Al-alloy plate has the advantage of no hot rolling crack and machining deformation, and improved proof strength at non-proportional extension.

IT Annealing
Casting of metals
Cold rolling
Filtration
Homogenization
(Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension)

IT Filters
(ceramic; Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension)

IT Ceramics
(filters; Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at

non-proportional extension)

IT Rolling (metals)
(hot; Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension)

IT 952105-95-2
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension)

IT 12617-27-5 13463-67-7, Titania, uses 16923-95-8, Potassium hexafluoro-zirconate 39364-34-6 39364-47-1
RL: TEM (Technical or engineered material use); USES (Uses)
(Al alloy sheet for train compartment capable of preventing hot rolling crack and machining deformation, and improving strength at non-proportional extension)

L30 ANSWER 16 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:735523 HCAPLUS
DOCUMENT NUMBER: 145:193265
TITLE: Aluminum-based alloy for aviation and shipbuilding
INVENTOR(S): Popov, V. I.
PATENT ASSIGNEE(S): OAO "Kamensk-Ural'skii Metallurgicheskii Zavod", Russia
SOURCE: Russ., 13 pp.
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2280705	C2	20060727	RU 2004-127634	20040915
PRIORITY APPLN. INFO.:			RU 2004-127634	20040915

AB The invention is suitable in metallurgy of aluminum alloys, especially Al-Mg-Mn alloys, for the manufacture of armored semi-finished products and articles for aviation and shipbuilding. The alloy contains Mg 4.2-6.5, Mn 0.5-1.2, Zn ≤0.2, Cr ≤0.2, Ti ≤0.15, Si ≤0.25, Fe ≤0.3, Cu ≤0.1, Zr ≤0.05-0.3 weight%, and at least one element selected from Sc, 0.05-0.3 weight%, Be 0.0001-0.01 weight%, Y 0.001-0.1 weight%, Nd 0.001-0.1 weight%,, Ce 0.001-0.1 weight%,, and Al in the balance. The resulting alloy and articles made from it have high resistance to ballistic action of various projectiles due to optimal strength characteristics, optimal structure and plasticity characteristics, as well as enhanced corrosion resistance and weldability.

IT Aerospace industry
(aviation and aeronautics; aluminum-based alloy for aviation and shipbuilding)

IT Armor
(plate; aluminum-based alloy for aviation and shipbuilding)

IT 902164-10-7 902164-12-9 902164-15-2 902164-18-5
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aluminum armor alloy; aluminum-based alloy for aviation and shipbuilding)

IT 902164-07-2
RL: TEM (Technical or engineered material use); USES (Uses)

(aluminum armor alloy; aluminum-based alloy for aviation and shipbuilding)

L30 ANSWER 17 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:122425 HCAPLUS
DOCUMENT NUMBER: 144:175087
TITLE: Aluminum alloys for mushy-state casting of automotive chassis
INVENTOR(S): Minakami, Takahiro; Toyota, Yusuke; Shibata, Katsuhiro; Murakata, Ryoichi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006037190	A	20060209	JP 2004-221225	20040729

PRIORITY APPLN. INFO.: JP 2004-221225 20040729

AB The title Al alloys contain 2.0-4.0 weight% Si and are obtained by rapidly cooling mushy-state melt having solid-phase ratio 25-45%. The title process comprises steps of (1) preparing the mushy-state melt at periphery of eutectic point in a container, (2) setting the container to an injection sleeve, (3) closing a die, (4) filling the melt to a cavity by pressing with a plunger, and then (5) cooling at ≥5°/s. The cast Al alloys provide high toughness.

IT Casting of metals
Cooling
(aluminum alloys for mushy-state casting of automotive chassis)

IT Cast alloys
RL: DEV (Device component use); USES (Uses)
(aluminum; aluminum alloys for mushy-state casting of automotive chassis)

IT Automobiles
(chassis; aluminum alloys for mushy-state casting of automotive chassis)

IT 11145-29-2 12609-50-6, Aluminum 97, silicon 3 12686-71-4 12727-35-4
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(aluminum alloys for mushy-state casting of automotive chassis)

L30 ANSWER 18 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:75775 HCAPLUS
DOCUMENT NUMBER: 144:132643
TITLE: Tough cast aluminum alloys and method for their manufacture
INVENTOR(S): Toyota, Yusuke; Shibata, Katsuhiro; Minakami, Takahiro; Murakata, Ryoichi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006022385	A	20060126	JP 2004-202713	20040709
PRIORITY APPLN. INFO.:			JP 2004-202713	20040709

AB The title cast Al alloys consisting of Si 2-4, Mg 0.2-0.5, Cu 0.4-0.8, Ni 0.05-0.3 weight%, and balance Al having tensile strength ≥300 MPa, 0.2% yield strength ≥210 MPa, and elongation ≥10% are claimed. Alloys having the said composition is cast, heat treated at 515-540° and then aged at 165-185° to give the claimed alloys. The alloys are especially suitable for structures in automobiles.

IT Aging, materials
Heat treatment
(manufacture of cast aluminum alloys with balanced elongation and tensile strength)

IT 873590-90-0 873590-91-1 873590-92-2 873590-93-3 873590-94-4 873590-95-5 873590-96-6 873590-97-7 873590-98-8
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of cast aluminum alloys with balanced elongation and tensile strength)

L30 ANSWER 19 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2008:34587 HCAPLUS
DOCUMENT NUMBER: 148:407301
TITLE: Low-temperature heating changes properties of welded joints of aluminum alloy V92Zr
AUTHOR(S): Svedlin, A. V.
CORPORATE SOURCE: Bradley University, Peoria, IL, USA
SOURCE: Heat Treating, Proceedings of the ASM Heat Treating Society Conference, 23rd, Pittsburgh, PA, United States, Sept. 25-28, 2005 (2006), Meeting Date 2005, 370-375. Editor(s): Herring, Daniel; Hill, Robert. ASM International: Materials Park, Ohio. CODEN: 69KGZS; ISBN: 978-0-87170-832-8
DOCUMENT TYPE: Conference
LANGUAGE: English

AB The high-strength aluminum alloy V92Zr system Al-Zn-Mg is self-quenched alloy. The major alloying elements are 4.2 wt % Mg, 3.2 wt % Zn, 0.6 wt % Mn, and 0.15 wt % Zr. The most acceptable filler wires to weld this alloy are V92W, alloys AMg6, AMg4Zr and No.11 (Al-Zn-Mg). This alloy can be used in the aircraft production Prolonged heating at 50-70°C can lead to substantial structural changes in precipitation hardening of aluminum alloys due to the transition from zone to phase aging. According to, zone aging of Al-Zn-Mg alloys, particularly the weld seams, with repeated heating at 50-70°C substantially increases the strength and lowers the elongation, reduction in cross-sectional area, toughness, resistance to stress corrosion, and increases susceptibility to cracking. It was shown in that heating at temps. even below the phase aging temperature changes the properties considerably. This article deals with the effect of prolonged low-temperature heating on the mech. properties, sensitivity to cracks in impact bending, and corrosion resistance of semifinished products and weldments of aluminum alloys V92Zr after solution treatment and aging at the room and elevated temps.

IT Bending
Crack (fracture)
Elongation at break
Forging

Fracture toughness
Heating
Polarizability
Tensile strength
Welds
Yield strength
(low-temperature heating changes properties of welded joints of aluminum alloy V92Zr)

IT Corrosion
(resistance; low-temperature heating changes properties of welded joints of aluminum alloy V92Zr)

IT 12732-16-0 39410-66-7 81159-87-7, AMg4 284685-77-4
1015477-81-2, Aluminum 91, iron 0.2, magnesium 4.4, manganese 0.8, silicon 0.1, zinc 3.4, zirconium 0.1
1015477-82-3, Aluminum 95, iron 0.1, magnesium 4.1, manganese 0.4, silicon 0.2, titanium 0.1, zinc 0.1, zirconium 0.1
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(low-temperature heating changes properties of welded joints of aluminum alloy V92Zr)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 20 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:972681 HCAPLUS
DOCUMENT NUMBER: 147:489920
TITLE: Alloy design by spreadsheet
AUTHOR(S): Dupen, Barry
CORPORATE SOURCE: Indiana University - Purdue University, Fort Wayne, USA
SOURCE: Materials Science & Technology 2006 Conference and Exhibition, MST&T'06, Cincinnati, OH, United States, Oct. 15-19, 2006 (2006), facv2/365-facv2/373. Minerals, Metals & Materials Society: Warrendale, Pa. CODEN: 69JOEQ
DOCUMENT TYPE: Conference; (computer optical disk)
LANGUAGE: English

AB Com. manufacturers of metallic casting alloys are interested in composition-dependent materials properties, such as liquidus and solidus temps., thermal and elec. conductivity, and color (important in dentistry and jewelry). A two-step method is proposed for predicting compns. which have the desired properties. First, property data for existing alloys is entered into a spreadsheet, and matrix algebra is used to calculate the coeffs. for a multivariable nonlinear regression equation. Second, the spreadsheet uses the regression equation recursively to predict properties of all possible alloys within a search field. Results are sorted according to the target property range. One benefit of using a spreadsheet is that a small or medium-sized company with limited resources can develop and run its own alloy property prediction program at relatively low cost. Unlike com.-available phase diagram prediction software, this method can be applied to any composition-dependent property of an alloy system.

IT Electric conductivity
Temperature
Thermal conductivity
(alloy design by spreadsheet)

IT Computer program
(spreadsheet; alloy design by spreadsheet)

IT 954098-28-3, Aluminum 76-99, boron 0-0.1, chromium 0-0.5, copper 0-10, iron 0.1-2, magnesium 0-10, manganese 0-1.2, nickel 0-2.5, silicon 0-19, titanium 0-0.4, vanadium 0-0.1, zinc 0-7.7, zirconium 0-1, tin 0-6.2

RL: PRP (Properties)
(alloy design by spreadsheet)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 21 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1077850 HCAPLUS
DOCUMENT NUMBER: 143:351105
TITLE: Cast and weldable Al-Si based alloy and alloy member made therefrom
INVENTOR(S): Fukuchi, Fumiaki; Yahaba, Takanori
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050220660	A1	20051006	US 2005-92978	20050330
JP 2005281829	A	20051013	JP 2004-101044	20040330
DE 102005014485	A1	20060105	DE 2005-102005014485	20050330
PRIORITY APPLN. INFO.:			JP 2004-101044 A	20040330

AB An Al-Si based alloy and an alloy member made of the alloy are disclosed, in which when alloys produced by die casting under high vacuum conditions are welded, weldability can be improved without increasing plate thickness of welded portions and reducing gas content in die casting. The alloy contains Si 7.5-9, Mg 0.2-0.4, Mn 0.3-0.5, Cu 0.03-0.2, Fe 0.1-0.25, Sr 0.0050.02 weight%, and aluminum in the balance.

IT Elongation at break
Impact strength
(cast Al-Si based alloy and alloy member made therefrom)

IT Casting of metals
(die; cast Al-Si based alloy and alloy member made therefrom)

IT Welding of metals
(gas tungsten-arc; cast Al-Si based alloy and alloy member made therefrom)

IT Aging, materials
(of cast alloy; cast Al-Si based alloy and alloy member made therefrom)

IT Tensile strength
(ultimate; cast Al-Si based alloy and alloy member made therefrom)

IT 866035-22-5 866035-23-6 866035-24-7 866035-25-8 866035-26-9
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(cast Al-Si based alloy and alloy member made therefrom)

IT 866035-21-4
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(claim 1; cast Al-Si based alloy and alloy member made therefrom)

L30 ANSWER 22 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1285265 HCAPLUS
DOCUMENT NUMBER: 144:25687
TITLE: High toughness aluminum alloy cast for automobile parts
INVENTOR(S): Toyota, Yusuke; Shibata, Katsuhiro; Minakami, Takahiro; Murakashi, Ryoichi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005336569	A	20051208	JP 2004-158760	20040528
JP 4238181	B2	20090311		

PRIORITY APPLN. INFO.: JP 2004-158760 20040528

AB The alloy with tensile strength ≥280 MPa, yield strength ≥220 MPa, and elongation ≥12% comprises Si 2-5, Mg 0.2-0.5, Cu 0.4-0.8, Ge 0.05-0.3%, and Al bal. The alloy may further contain Zr, Ti, and/or B.

IT Elongation, mechanical
Impact strength
Tensile strength
Yield strength
(of aluminum alloy cast for automobile parts)

IT 205579-01-7 870462-29-6 870525-27-2 870525-28-3 870525-29-4 870525-30-7 870525-31-8 870525-32-9 870525-33-0 870525-34-1 870525-35-2 870525-36-3 870525-37-4 870525-38-5 870525-39-6 870525-40-9 870525-41-0 870525-42-1 870525-43-2 870525-44-3 870525-45-4
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(high toughness aluminum alloy cast for automobile parts)

L30 ANSWER 23 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1283373 HCAPLUS
DOCUMENT NUMBER: 144:25665
TITLE: High-toughness aluminum alloy casting and its production method
INVENTOR(S): Toyota, Yusuke; Shibata, Katsuhiro; Minakami, Takahiro; Murakashi, Ryoichi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005336568	A	20051208	JP 2004-158757	20040528
JP 4238180	B2	20090311		

PRIORITY APPLN. INFO.: JP 2004-158757 20040528

AB High-toughness Al alloy casting contains Si 2-4, Mg 0.2-0.5, Cu 0.4-0.8, Zr 0.1-0.4%, and

balance Al and has tensile strength ≥80 MPa, 0.2% yield strength ≥220 MPa and elongation ≥10%. Al alloy having the above composition is cast, heated at 500-540°, quenched and aged at 160-185° to obtain high-toughness Al alloy cast product.

IT Casting of metals
Tensile strength
Toughness
Yield strength
(high-toughness aluminum alloy casting and its production method)

IT 870462-24-1 870462-25-2 870462-26-3 870462-27-4 870462-28-5 870462-29-6 870462-30-9
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(high-toughness aluminum alloy casting and its production method)

L30 ANSWER 24 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:586890 HCAPLUS
DOCUMENT NUMBER: 143:101204
TITLE: Cast aluminum alloys with high toughness and their manufacture
INVENTOR(S): Toyota, Yusuke; Minakami, Takahiro; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005177791	A	20050707	JP 2003-420405	20031218
PRIORITY APPLN. INFO.:			JP 2003-420405	20031218

AB The alloys consist of Si 2-4, Mg 0.2-0.5, Cu 0.4-0.8, Fe >0.2 and ≤0.5, Ti 0.1-0.3 weight%, and balance Al and are characterized by its metallog. texture including α phase of grain size (d) d ≤50 μm. An Al alloy melt having the said chemical compns. is cast into a mold cavity under pressurized condition and solidified under controlling its cooling rate (CR) to CR ≥5°/s from the start of the solidification until its finishing. The cast alloys are suitable for bodies, parts, etc., for automobiles.

IT Casting of metals
(aluminum alloy; pressurized casting of Al alloys followed by solidification under controlled cooling rate for preparation of tough Al alloys)

IT Cast alloys
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum; pressurized casting of Al alloys followed by solidification under controlled cooling rate for preparation of tough Al alloys)

IT Automobiles
Cooling
Solidification
(pressurized casting of Al alloys followed by solidification under controlled cooling rate for preparation of

tough Al alloys)

IT 856220-20-7 856220-21-8 856220-23-0 856220-26-3 856220-27-4
856220-28-5 856220-29-6 856220-30-9 856220-31-0 856220-32-1
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(pressurized casting of Al alloys
followed by solidification under controlled cooling rate for preparation of tough Al alloys)

L30 ANSWER 25 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:449573 HCAPLUS
DOCUMENT NUMBER: 142:467390
TITLE: Powder-type mold releasing agents for cast metals
INVENTOR(S): Sasaki, Hajime; Yoshida, Makoto; Hakiri, Katsutoshi; Gohonjo, Takashi; Fukuchi, Fumiaki; Ando, Katsutoshi; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Hanano Shoji Co., Ltd., Japan; Honda Motor Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005131673	A	20050526	JP 2003-370557	20031030
PRIORITY APPLN. INFO.:			JP 2003-370557	20031030

AB The agents comprise 30-70 weight% organic compound and/or graphite and contain aluminum hydroxide and/or zinc oxide of particle size 1-30 μm, preferably 1-10 μm, as amphoteric compds. Easily releasable cast metals showing excellent over-coatability are obtained by use of the agents.

IT Parting materials
(mold releasing powder; organic- and/or graphite-based releasing powder containing ZnO and/or Al hydroxide for preparation of cast metals showing excellent over-coatability)

IT Amphoteric materials
Casting of metals
(organic- and/or graphite-based releasing powder containing ZnO and/or Al hydroxide for preparation of cast metals showing excellent over-coatability)

IT Aluminum alloy, base
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(organic- and/or graphite-based releasing powder containing ZnO and/or Al hydroxide for preparation of cast metals showing excellent over-coatability)

IT 37321-78-1, ADC 12
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(organic- and/or graphite-based releasing powder containing ZnO and/or Al hydroxide for preparation of cast metals showing excellent over-coatability)

IT 1314-13-2, Zinc oxide, uses 7782-42-5, Graphite, uses 21645-51-2, Aluminum hydroxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(organic- and/or graphite-based releasing powder containing ZnO and/or Al hydroxide for preparation of cast metals showing excellent

over-coatability)

L30 ANSWER 26 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:120012 HCAPLUS
DOCUMENT NUMBER: 142:181467
TITLE: Filler metal for welding of aluminum alloy material
INVENTOR(S): Kuriyama, Ryohei; Yamazaki, Kei; Nakano, Toshihiko
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005034896	A	20050210	JP 2003-276355	20030717
PRIORITY APPLN. INFO.:			JP 2003-276355	20030717

AB The claimed filler metal is an Al alloy containing Si ≤0.25, Mn 0.50-1.00, Mg 3.00-3.50, Ti 0.02-0.50, B 0.001-0.010, Zr 0.10-0.40, Fe ≤0.25, and Cu ≤0.10 weight%. The resulting welded Al alloy material provides low stress corrosion cracking and high-temperature cracking sensitivity.
IT Welding of metals
(filler metal for welding of aluminum alloy material)
IT 833465-81-9 833465-83-1 833465-85-3 833465-87-5 833465-89-7 833465-91-1 833465-93-3 833465-95-5 833465-97-7 833465-99-9 833466-01-6 833466-03-8 833466-05-0
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(filler; filler metal for welding of aluminum alloy material)
IT 7440-42-8, Boron, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(microalloying element; filler metal for welding of aluminum alloy material)

L30 ANSWER 27 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:159886 HCAPLUS
DOCUMENT NUMBER: 142:223719
TITLE: Cored wire electrode for the joint welding of high-strength aluminum alloys
INVENTOR(S): Bouaifi, Belkacem
PATENT ASSIGNEE(S): Germany
SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10334959	A1	20050224	DE 2003-10334959	20030731
PRIORITY APPLN. INFO.:			DE 2003-10334959	20030731

AB The invention concerns a cored wire electrode for the joint welding of building components from high-strength Al alloys with a tubular jacket, into which ≥1 powdered components are supplied, which are melt to the alloy by external heating of the filled jacket, whereby the jacket

consists of preferably an Al-Mg-Mn-alloy and contains a filling of water-, or gas-atomized melts with a particle size of <0.2 mm. The Al-Mg-Mn-alloy contains Si 0.1-0.5, Fe 0.1-0.5, Cu 0.1-0.4, Mn 0.4-1.2, Mg 0.6-4.0, Cr 0.05-0.3, Zn 0.1-1.5, Ti 0.01-0.2, Zr 0.05-0.25, Sc 0-1.0 weight% and Al as balance. The cored wire electrode is especially used for the welding of high-strength Al alloys applied in the light metal construction of the automobile and aerospace industry.

IT Aerospace industry
(aviation and aeronautics; cored wire electrode for the joint welding of high-strength aluminum alloys applied for)

IT Automobiles
(cored wire electrode for the joint welding of high-strength aluminum alloys applied for)

IT Welding of metals
(flux-cored arc, electrodes; for the joint welding of high-strength aluminum alloys)

IT 841260-31-9 841260-32-0 841260-33-1
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cored wire electrode for the joint welding of high-strength aluminum alloys)

IT 11145-78-1, AlMg3Mn 12616-86-3, AlMg4.5Mn0.7 12720-80-8, AlMg4 37202-63-4, AlMg4.5Mn0.4
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(filler material for cored wire electrode for the joint welding of high-strength aluminum alloys)

L30 ANSWER 28 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1147772 HCAPLUS
DOCUMENT NUMBER: 144:492600
TITLE: Development of aluminum subframe using hot bulging and vacuum die casting
AUTHOR(S): Fukuchi, Fumiaki; Yahaba, Takanori; Ogawa, Tsutomu; Hori, Izuru; Akiyama, Hiroshi
CORPORATE SOURCE: Honda R+D Co., Ltd., Shimotakanezawa 4630, Haga-machi, Haga-gun, Tochigi, Japan
SOURCE: Review of Automotive Engineering (2005), 26(3), 313-318
CODEN: RAEEAH; ISSN: 1349-4724
PUBLISHER: Society of Automotive Engineers of Japan, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The world's first aluminum subframe has been developed which is composed of bulge-formed members and die cast members welded by MIG. The bulging employed a newly developed hot process with superior formability together with an alloy developed for the hot process. The die casting employed a newly developed vacuum die casting process and alloy which has superior weldability. A method of MIG welding was established, after the weldability of these new alloys was researched. The developed subframe achieved a cost reduction and 10% weight reduction while keeping functional performance equal to or better than the company's conventional aluminum subframe.

IT Automobiles
(bodies; development of aluminum automobile subframe using hot bulging and vacuum die casting)

IT Casting of metals
(die; development of aluminum automobile subframe using hot bulging and vacuum die casting)

IT Metalworking
(forming, bulging; development of aluminum automobile subframe using hot bulging and vacuum die casting)
IT Casting process
(vacuum; development of aluminum automobile subframe using hot bulging and vacuum die casting)
IT Aluminum alloy, base
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(development of aluminum automobile subframe using hot bulging and vacuum die casting)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 29 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:440956 HCAPLUS
DOCUMENT NUMBER: 144:354874
TITLE: Superplastic magnalium for increased rates of superplastic forming
AUTHOR(S): Portnoi, V. K.; Rylov, D. S.; Levchenko, V. S.; Alalykin, A. A.
CORPORATE SOURCE: MISiS, Russia
SOURCE: Tsvetnye Metally (Moscow, Russian Federation) (2005), (1), 84-87
CODEN: TVMTAX; ISSN: 0372-2929
PUBLISHER: Izdatel'skii Dom "Ruda i Metally"
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Superplastic magnalium has been developed on the base of Russian Al-Mg alloy AMg6 and is directed at widening of the production range of automotive components from aluminum alloys via superplastic forming. The proposed alloy will increase the superplastic forming rate by 5-10 times, compared with that at present for alloy 5083 alloy (Russian analog AMg4). AMg6 has finer particle size than AMg4 and their dilatation curves, which have similar shape, show a relative lengthening of AMg6 which is 2-3 times greater than that of AMg4.
IT Microstructure
(of superplastic magnalium alloy AMg6 compared to AMg4)
IT Plasticity
(superplasticity, of Russian alloy AMg6; superplastic magnalium for increased rates of superplastic forming in manufacture of automotive components)
IT 81159-87-7, AMg4
RL: PRP (Properties)
(comparison of microstructure and superplasticity parameters of magnalium alloys AMg6 and AMg4)
IT 12732-16-0, AMg6
RL: PRP (Properties)
(superplastic magnalium for increased rates of superplastic forming in manufacture of automotive components)

L30 ANSWER 30 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2006:393724 HCAPLUS
DOCUMENT NUMBER: 146:126286
TITLE: XRFS determination of 10 alloying elements in superhard aluminum alloys
AUTHOR(S): Wu, Yanqing; Xu, Hai
CORPORATE SOURCE: Xi'an Huashan Machine Plant, Xi'an, 710043, Peop. Rep. China
SOURCE: Lihua Jianyan, Huaxue Fence (2005), 41(1), 28-29
CODEN: LJHFE2; ISSN: 1001-4020

PUBLISHER: Lihua Jianyan Zazhishe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB A rapid, accurate and precise XRFS method for the determination of 10 alloying elements (Cu, Mg, Zn, Fe, Si, Mn, Cr, Ni, Ti, and Zr) in superhard Al alloys by SRS 300 XRF spectrometer was reported. The samples were lathed to have plain and smooth surfaces. A set of SRM's (prepared by the Southwest Aluminum Plant in 1989) was used for drawing of working standard curves. The simulation, regression anal., and correction for matrix effect were carried out by software and computer. The results of precision test for all these 10 elements showed that RSD's (n = 10) were <2.2%. The determination results of the 10 elements in 3 samples obtained by the method were in agreement with those obtained by conventional chemical method.
IT 7439-89-6, Iron, analysis 7439-95-4, Magnesium, analysis 7439-96-5, Manganese, analysis 7440-02-0, Nickel, analysis 7440-21-3, Silicon, analysis 7440-32-6, Titanium, analysis 7440-47-3, Chromium, analysis 7440-66-6, Zinc, analysis 7440-67-7, Zirconium, analysis
RL: ANT (Analyte); ANST (Analytical study)
(XRFS determination of 10 alloying elements in superhard aluminum alloys)
IT 918789-28-3, Aluminum 81-98, chromium 0.1-0.4, copper 0.1-3, iron 0.1-0.7, magnesium 0.3-4, manganese 0.1-0.9, nickel 0-0.2, silicon 0.1-0.8, titanium 0-0.2, zinc 1.4-8.4, zirconium 0-0.3
RL: NUU (Other use, unclassified); USES (Uses)
(sample; XRFS determination of 10 alloying elements in superhard aluminum alloys)

L30 ANSWER 31 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:1125675 HCAPLUS
DOCUMENT NUMBER: 142:60742
TITLE: Aluminum-silicon-base alloy cast products with high toughness and stress corrosion cracking resistance and their manufacture
INVENTOR(S): Nakamura, Takeyoshi; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004359988	A	20041224	JP 2003-157903	20030603
JP 4092255	B2	20080528		
PRIORITY APPLN. INFO.:			JP 2003-157903	20030603

AB The cast products are obtained from semi-solid slurry of the alloy comprising Si 6.5-7.5, Cu 0.5-1.5, Mg 0.4-0.5, Ti <0.2 weight%, and balance Al and have volume ratio of solid-solidified region (SS) Vf 40-60%. The cast products are manufactured by pouring the semi-solid slurry with the above composition and solid ratio S 40-60% into a mold and cooling. The process may be thixocasting or rheocasting process. Primary crystallization of Si in liquid-solidified region and segregation are prevented. The cast products have high toughness and stress corrosion cracking resistance.
IT Cast alloys
RL: PEP (Physical, engineering or chemical process); PYP (Physical

process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum-silicon; manufacture of Al-Si-base alloy cast products with high toughness and stress corrosion cracking resistance from semi-solid slurry)

IT Casting of metals
(rheocasting; manufacture of Al-Si-base alloy cast products with high toughness and stress corrosion cracking resistance from semi-solid slurry)

IT Casting of metals
(thixocasting; manufacture of Al-Si-base alloy cast products with high toughness and stress corrosion cracking resistance from semi-solid slurry)

IT 809275-84-1 809275-85-2 809275-87-4 809275-88-5
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of Al-Si-base alloy cast products with high toughness and stress corrosion cracking resistance from semi-solid slurry)

L30 ANSWER 32 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:1058568 HCAPLUS
DOCUMENT NUMBER: 142:42199
TITLE: Manufacture of Al-Si alloy cast having high toughness and stress corrosion cracking resistance
INVENTOR(S): Nakamura, Takeyoshi; Shibata, Katsuhiro; Minakami, Takahiro
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004346408	A	20041209	JP 2003-147850	20030526
PRIORITY APPLN. INFO.:			JP 2003-147850	20030526

AB The alloy comprises Si 5.5-8, Fe ≤0.1, Mg 0.4-0.5, Ti ≤0.2%, and Al bal. In the solid-liquid coexisting casting process of the alloy, the volume ratio of the solid phase solidification area (SS) is 30% ≤Vf ≤60%; and the Fe content of the liquid phase solidification area (SL) is Fe ≤0.2 weight%. The alloy cast is manufactured by preparing the solid-liquid coexisting material with solid phase ratio being 30% ≤S ≤60%, pouring into the mold, and cooling.

IT Casting of metals
Impact strength
(manufacture of Al-Si alloy cast having high toughness and stress corrosion cracking resistance)

IT Stress corrosion cracking
(resistance; manufacture of Al-Si alloy cast having high toughness and stress corrosion cracking resistance)

IT 804566-20-9P 804566-22-1P 804566-25-4P
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); PREP (Preparation); PROC (Process)
(manufacture of Al-Si alloy cast having high toughness and stress corrosion cracking resistance)

L30 ANSWER 33 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:992914 HCAPLUS
DOCUMENT NUMBER: 141:414242
TITLE: Light-weight cast Al alloy machine structural part
INVENTOR(S): Matsumoto, Yoichi; Shibata, Katsuhiro; Nakamura, Takeyoshi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004322103	A	20041118	JP 2003-115779	20030421
JP 4116921	B2	20080709		
PRIORITY APPLN. INFO.:			JP 2003-115779	20030421

AB The part is formed by casting a material with hypoeutectic Al-Si alloy composition while containing liquid phase and solid phase and has a main area integrated with a lightwt. area with decreased volume, wherein the Si content in the lightwt. area is higher than that in the main area. The lightwt. area has improved strength owing to increased Si content.
IT Cast alloys
RL: TEM (Technical or engineered material use); USES (Uses)
(aluminum; lightwt. cast Al-Si alloy machine structural part having lightwt. area with high Si content)
IT Machinery parts
(lightwt. cast Al-Si alloy machine structural part having lightwt. area with high Si content)
IT 11099-22-2 791616-38-1, Aluminum 92, copper 0.1, iron 0.1, magnesium 0.4, silicon 7.4, titanium 0.1
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hypoeutectic; lightwt. cast Al-Si alloy machine structural part having lightwt. area with high Si content)

L30 ANSWER 34 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:739087 HCAPLUS
DOCUMENT NUMBER: 141:246965
TITLE: Aluminum-magnesium alloy sheets having high strength and deep drawability
INVENTOR(S): Kajiwara, Katsura; Matsumoto, Kazuhide
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004250738	A	20040909	JP 2003-41141	20030219
PRIORITY APPLN. INFO.:			JP 2003-41141	20030219

AB Al-Mg alloys containing 2-6 weight% Mg and having textures characterized by having Cube orientation 10-30%, S orientation 30-50%, both Cu orientation and Brass orientation 5-20%, Goss orientation

≤10%, and (Cube + Goss)/(S + Cu + Brass) = 0.1-0.5. Preferably, the alloys also contain (A) Mn ≤1.0, (B) Cu ≤0.6, (C) Fe ≤0.7,Si ≤0.5,Cr ≤0.4,Zn ≤0.5, and/or Zr ≤0.3, and/or (D) 0.005-0.20 weight% Ti and optionally 0.0001-0.05 weight% B. The sheets have decreased ear ratio.

IT Texture (metallographic)
(Al-Mg alloy sheets with certain texture orientation with high strength and deep drawability)

IT Drawing (forming)
(deep; Al-Mg alloy sheets with certain texture orientation with high strength and deep drawability)

IT 12686-54-3 126744-93-2 749250-11-1 749250-12-2 749250-13-3 749250-14-4 749250-15-5
RL: TEM (Technical or engineered material use); USES (Uses)
(Al-Mg alloy sheets with certain texture orientation with high strength and deep drawability)

IT 7440-42-8, Boron, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(microalloying element; Al-Mg alloy sheets with certain texture orientation with high strength and deep drawability)

L30 ANSWER 35 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:632102 HCAPLUS
DOCUMENT NUMBER: 141:160824
TITLE: Manufacture of closed section structure filled with foamed body
INVENTOR(S): Ishikawa, Ryoichi; Shibata, Katsuhiro; Hayakawa, Kimito
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004218035	A	20040805	JP 2003-9242	20030117
JP 4233018	B2	20090304		
US 20040191107	A1	20040930	US 2004-758283	20040116
US 7141206	B2	20061128		

PRIORITY APPLN. INFO.: JP 2003-9242 A 20030117

AB The process comprises preparing metal powder, foaming agent, and metal plate, mixing the metal powder with the foaming agent, forming the mixture into planar shape, stretching and attaching the formed foaming agent mixture onto one side of the metal plate, wrapping the foaming agent mixture with the metal plate, plastic-deforming to obtain the closed section structure, and heating at the foaming temperature The obtained structure is suitable for automobile body.

IT Automobiles
(bodies; manufacture of closed section structure filled with foamed body for)

IT Foaming agents
(for manufacture of closed section structure filled with foamed body)

IT Cellular materials
(manufacture of closed section structure filled with foamed body)

IT Copper alloy, base
Magnesium alloy, base
Zinc alloy, base
RL: PEP (Physical, engineering or chemical process); PYP (Physical

process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(powder and plate, raw material; for manufacture of closed section structure filled with foamed body)

IT 124-38-9, Carbon dioxide, processes 13776-99-3, Titanium hydride (TiH)
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(foaming agent; for manufacture of closed section structure filled with foamed body)

IT 7429-90-5, Aluminum, processes 11099-22-2
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(powder and plate, raw material; for manufacture of closed section structure filled with foamed body)

L30 ANSWER 36 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:427660 HCAPLUS
DOCUMENT NUMBER: 140:427270
TITLE: Stabilized carbonate powder as melt-foaming agent for manufacture of porous metal
INVENTOR(S): Ishikawa, Ryoichi; Shibata, Katsuhiro; Nakamura, Takashi
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1422302	A1	20040526	EP 2003-26197	20031117
EP 1422302	B1	20090318		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004183095	A	20040702	JP 2003-358447	20031017
JP 3986489	B2	20071003		
US 20040126583	A1	20040701	US 2003-698015	20031031
US 20060173082	A1	20060803	US 2006-393865	20060331
US 7410523	B2	20080812		

PRIORITY APPLN. INFO.: JP 2002-335622 A 20021119
US 2003-698015 A3 20031031

AB The foaming agent for melt treatment in manufacture of a foamed or porous metal is CaCO3 or MgCO3 powder precoated with SiO2 or silicate film for stability. The powder suitable for foaming of molten Al-7% Si alloy is prepared from CaCO3 powder by copptn. coating in aqueous slurry with 2% Na2SiO3 at the pH of 6.87, followed by drying the coated powder at 100°.

IT Metals, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(foamed, casting of; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)

IT Casting of metals
(melt foaming in; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)

IT Aluminum alloy, base
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)
(molten, foaming of; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)

IT 1344-09-8, Water glass 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(film, carbonate powder for melt foaming with; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)
IT 12635-40-4
RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process)
(molten, foaming of; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)
IT 471-34-1, Calcium carbonate, uses 546-93-0, Magnesium carbonate
RL: TEM (Technical or engineered material use); USES (Uses)
(powder, melt foaming with; carbonate powder as melt-foaming agent for manufacture of porous metal or alloy)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 37 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:249244 HCAPLUS
DOCUMENT NUMBER: 140:274470
TITLE: Heating/pressurized medium cooling process for cast aluminum alloy parts with improved surface quality, porosity and impact strength
INVENTOR(S): Nakamura, Takeyoshi; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Honda Giken Kogyo K. K., Japan
SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10341575	A1	20040325	DE 2003-10341575	20030909
JP 2004099962	A	20040402	JP 2002-262890	20020909
US 20040103964	A1	20040603	US 2003-648831	20030827
PRIORITY APPLN. INFO.:			JP 2002-262890 A	20020909

AB Heat treatment of cast light metal alloys, especially cast Al alloys, involves (1) heating up to a range of a solid solution (preferably above the solidus temperature), (2) holding at such temperature, and (3) cooling by using a cooling medium (e.g., water) under pressure of 200-2,000 bar. The procedure suppresses a porosity increase and prevents formation of blisters on the surface of the cast alloy parts. Strength of the castings is increased.
IT Cast alloys
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(aluminum; heat treatment of cast aluminum alloy parts under pressure for decreased porosity and surface blisters and increased strength)
IT Heat treatment
Impact strength
Porosity
(heating/pressurized medium cooling process for cast aluminum alloy parts with improved surface quality, porosity and impact strength)
IT Cooling
(under pressurized medium; heating/pressurized medium cooling process for cast aluminum alloy parts with improved surface quality, porosity and impact strength)

IT 12773-40-9, A356
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(heat treatment of cast aluminum alloy parts under pressure for decreased porosity and surface blisters and increased strength)

L30 ANSWER 38 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:377014 HCAPLUS
DOCUMENT NUMBER: 141:177674
TITLE: Characteristics of structural changes during superplastic deformation of alloy AMg4
AUTHOR(S): Pozdnyakova, A. V.; Portnoi, V. K.
CORPORATE SOURCE: Kafedra Metalloved. Tsvetn. Metallov, Mosk. Gos. Inst. Stali i Splavov (Tekhnol. Univ., Moscow, Russia
SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Tsvetnaya Metallurgiya (2004), (1), 53-56
CODEN: IVUTAK; ISSN: 0021-3438
PUBLISHER: Moskovskii Gosudarstvennyi Institut Stali i Splavov
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Quant. metallog. was used to study changes of the structure (grain shape and size in longitudinal and transverse thickness sections) in the process of superplastic deformation of AMg4 alloy. The intermittent changes both in the sheet plane and thickness sections were observed The intermittent elongation of the grains and recovery of their equiaxial shape confirmed the dynamic recrystn. phenomena during the superplastic deformation, i.e. this was a process occurring in the specimen bulk rather than a characteristic of the surface layer. In both thickness sections, division of the grains along the stretching axis was observed, which was a direct indication of the dynamic recrystn.
IT Grain size
(characteristics of structural changes during superplastic deformation of alloy AMg4)
IT Recrystallization
(dynamic; structural changes during superplastic deformation of alloy AMg4 in relation to)
IT Stress, mechanical
(flow; characteristics of structural changes during superplastic deformation of alloy AMg4 in relation to)
IT Microstructure
(grain size and shape; characteristics of structural changes during superplastic deformation of alloy AMg4)
IT Plastic deformation
(superplastic; characteristics of structural changes during superplastic deformation of alloy AMg4)
IT 81159-87-7, AMg4
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(characteristics of structural changes during superplastic deformation of alloy AMg4)

L30 ANSWER 39 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:504380 HCAPLUS
DOCUMENT NUMBER: 142:301548
TITLE: Methods for decreasing the content of harmful impurities in recycling of aluminum wastes
AUTHOR(S): Kalenik, O. N.; Nemenenok, B. M.; Tribushevskii, V. L.; Dovnar, G. V.; Sitnichenko, M. M.
CORPORATE SOURCE: BNTU, Minsk, Belarus
SOURCE: Metallurgiya Mashinostroeniya (2004), (2), 11-13
CODEN: MMEAC2

PUBLISHER: OOO "Liteinoe Proizvodstvo"
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The main impurities that impair the quality of Al alloy scrap are Fe, Mg, and Zn, and the removal of these impurities is considered in industrial recycling. The manufacture of secondary Al alloys from low-grade Al scrap and wastes is improved by decreasing these impurities to acceptable concns. The AMg4 scrap is suitable for replacing Mg ingots in the manufacture of Al-Mg alloys with decreased vaporization loss of Mg.

IT Recycling
(of aluminum alloy, scrap processing for; methods for decreasing metal impurities in recycling of aluminum alloy scrap and waste)

IT 7439-89-6, Iron, processes 7439-95-4, Magnesium, processes
RL: REM (Removal or disposal); PROC (Process)
(impurity in aluminum alloy scrap; methods for decreasing metal impurities in recycling of aluminum alloy scrap and waste)

IT 7440-66-6, Zinc, processes
RL: REM (Removal or disposal); PROC (Process)
(impurityin aluminum alloy scrap; methods for decreasing metal impurities in recycling of aluminum alloy scrap and waste)

IT 7429-90-5, Aluminum, uses 81159-87-7, AMg4
RL: TEM (Technical or engineered material use); USES (Uses)
(scrap, recycling of; methods for decreasing metal impurities in recycling of aluminum alloy scrap and waste)

L30 ANSWER 40 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:972274 HCAPLUS
DOCUMENT NUMBER: 140:7577
TITLE: Die casting having high toughness
INVENTOR(S): Toyoda, Yusuke; Mizukami, Takahiro ; Fukuchi, Fumiaki; Hata, Tsunehisa ; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Honda Giken Kogyo Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003102257	A1	20031211	WO 2003-JP5993	20030514
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2003342664	A	20031203	JP 2002-157329	20020530
JP 4092138	B2	20080528		
JP 2004001010	A	20040108	JP 2002-157328	20020530
JP 4210473	B2	20090121		

AU 2003235302	A1	20031219	AU 2003-235302		20030514
EP 1508627	A1	20050223	EP 2003-723374		20030514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
US 20060137848	A1	20060629	US 2005-518151		20050927
PRIORITY APPLN. INFO.:			JP 2002-157328	A	20020530
			JP 2002-157329	A	20020530
			WO 2003-JP5993	W	20030514

AB A high-toughness die casting comprises an Al-Mg based alloy having a chemical composition, in weight %: 3.5≤ Mg ≤ 4.5, 0.8 ≤ Mn ≤ 1.5, Si < 0.5, Fe < 0.5, Ti + Zr ≥ 0.3, 0.3 ≤ Ti/Zr ≤ 2 and balance of Al. The die casting exhibits high toughness and can be suitably used as a thin and large die casting.

IT Casting of metals
Toughness
(die casting having high toughness of aluminum-magnesium alloy)

IT 116658-27-6 627892-55-1 627892-56-2 627892-57-3 627892-58-4 627892-59-5 627892-60-8 627892-61-9 627892-62-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(die casting having high toughness of aluminum-magnesium alloy)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 41 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER:	2003:133508 HCAPLUS
DOCUMENT NUMBER:	138:174180
TITLE:	Aluminum-magnesium alloys for weldable high-strength strip resistant to corrosion
INVENTOR(S):	Van Der Hoeven, Job Anthonius; Zuang, Linzhong; Schepers, Bruno
PATENT ASSIGNEE(S):	Corus Aluminium N.V., Belg.; Corus Aluminium Walzprodukte Gmbh
SOURCE:	PCT Int. Appl., 18 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003014405	A1	20030220	WO 2002-EP8627	20020731
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10231437	A1	20030227	DE 2002-10231437	20020711
GR 2002100348	A	20030328	GR 2002-100348	20020726
GR 1004282	B2	20030626		
AU 2002331383	A1	20030224	AU 2002-331383	20020731

AU 2002331383 B2 20071213
EP 1461465 A1 20040929 EP 2002-767307 20020731
R: AT, BE, CH, DK, ES, GB, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
FR 2828498 A1 20030214 FR 2002-10077 20020808
FR 2828498 B1 20050902
US 20040261922 A1 20041230 US 2004-486112 20040827
US 20070187009 A1 20070816 US 2007-740230 20070425
PRIORITY APPLN. INFO.: EP 2001-203034 A 20010810
EP 2002-75049 A 20020103
EP 2002-77548 A 20020627
WO 2002-EP8627 W 20020731
US 2004-486112 A3 20040827

AB The corrosion-resistant Al alloy for weldable sheet or strip contains Mg 3.1-4.5, Mn 0.4-0.85, Zn 0.4-0.8, Cu 0.06-0.35, Cr <0.25, Fe <0.35, Si <0.2, Zr <0.25, Ti <0.3, and impurities at ≤0.05 each with total of ≤0.15%. The Al-alloy strip is preferably manufactured by cold rolling to the final thickness, followed by annealing with rapid heating at 2-200°/s, holding for ≤100 s at 480-570°, and cooling at 10-500°/s to below 150°. The Al-alloy strip is preferably 1.6-2.4 mm thick, and is suitable for welded pressure vessels resistant to intergranular corrosion. The Al alloy retains tensile yield strength ≥120 MPa after 1000-h holding at 100°. The typical Al alloy contains Mg 4.29, Mn 0.50, Zn 0.54, Cu 0.085, Cr 0.14, Fe 0.14, Si 0.04, Zr 0.001, and Ti 0.02%.

IT Welds
(Al-alloy; aluminum-magnesium alloys for weldable high-strength strip resistant to corrosion)
IT Pressure vessels
(Al-alloy; aluminum-magnesium alloys for welded pressure vessels resistant to corrosion)
IT 497821-82-6
RL: TEM (Technical or engineered material use); USES (Uses)
(alloying of; aluminum-magnesium alloys for weldable high-strength strip resistant to corrosion)
IT 497821-83-7 497821-84-8 497821-85-9 497821-86-0
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloyed; aluminum-magnesium alloys for weldable high-strength strip resistant to corrosion)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 42 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:97562 HCAPLUS
DOCUMENT NUMBER: 138:157325
TITLE: Aluminum alloy excellent in machinability, and aluminum alloy material and method for production thereof
INVENTOR(S): Matsuoka, Hideaki; Yamanaka, Masaki; Yoshioka, Hiroki; Okamoto, Yasuo; Kitamura, Masakatsu
PATENT ASSIGNEE(S): Showa Denko K. K., Japan
SOURCE: PCT Int. Appl., 79 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003010349	A1	20030206	WO 2002-JP7517	20020725

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
UA, UG, UZ, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,
CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

CA 2454509	A1	20030206	CA 2002-2454509		20020725
AU 2002323939	A1	20030217	AU 2002-323939		20020725
US 20030143102	A1	20030731	US 2002-202669		20020725
EP 1413636	A1	20040428	EP 2002-755647		20020725
EP 1413636	B1	20090128			

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

CN 1555423	A	20041215	CN 2002-818303		20020725
AT 422000	T	20090215	AT 2002-755647		20020725
JP 4227014	B2	20090218	JP 2003-515695		20020725
US 20060027291	A1	20060209	US 2005-236523		20050928
JP 2009024265	A	20090205	JP 2008-259961		20081006
PRIORITY APPLN. INFO.:			JP 2001-224661	A	20010725
			US 2001-311363P	P	20010813
			JP 2002-148340	A	20020522
			JP 2003-515695	A3	20020725
			US 2002-202669	A3	20020725
			WO 2002-JP7517	W	20020725

AB A 1st Al alloy containing Mg 0.3-6, Si 0.3-10, Zn 0.05-1, and Sr 0.001-0.3%. A 2nd Al alloy contains the elements contained in the 1st alloy in amts. described above and further ≥1 from Cu, Fe, Mn, Cr, Zr, Ti, Na and Ca. A 3rd Al alloy containing Mg 0.1-6, Si 0.3-12.5, Cu ≥0.01 and <1, Zn 0.01-3, and Sr 0.001-0.5%. A 4th Al alloy contains the elements contained in the 1st alloy in amts. described above and further ≥1 from Ti, B, C, Fe, Cr, Mn, Zr, V, Sc, Ni, Na, Sb, Ca, Sn, Bi, and In. The alloys are manufactured by casting a billet at 10-180 mm/min, homogenizing by holding for ≥6 h at 400-570°, extruding at a billet temperature of 300-550°, an extrusion rate of 0.5-100 m/min, and extrusion ratio of 10-200, solution treating for ≥1 h at 400-570°, and then aging for 1-30 h at 90-300°. The alloys are excellent in machinability.

IT Extrusion of metals
(aluminum alloy excellent in machinability, and
aluminum alloy material and method for production thereof)

IT 494836-73-6	494836-74-7	494836-75-8	494836-76-9	494836-77-0	
494836-78-1	494836-79-2	494836-80-5	494836-81-6	494836-82-7	
494836-83-8	494836-84-9	494836-85-0	494836-86-1	494836-87-2	
494836-88-3	494836-89-4	494836-90-7	494836-91-8	494836-92-9	
494836-93-0	494836-94-1	494836-95-2	494836-96-3	494836-97-4	
494836-98-5	494836-99-6	494837-00-2	494837-01-3	494837-02-4	
494837-03-5	494837-04-6	494837-05-7	494837-06-8	494837-07-9	
494837-08-0	494837-09-1	494837-10-4	494837-11-5	494837-12-6	
494837-13-7	494837-14-8	494837-15-9	494837-16-0	494837-17-1	
494837-18-2	494837-19-3	494837-20-6	494837-21-7	494837-22-8	
494837-23-9	494837-24-0	494837-25-1	494837-26-2	494837-27-3	
494837-28-4	494837-29-5	494837-30-8	494837-31-9	494837-32-0	
494837-33-1	494837-34-2	494837-35-3	494837-36-4	494837-37-5	
494837-38-6	494837-39-7	494837-40-0	494837-41-1	494837-42-2	
494837-43-3	494837-44-4	494837-45-5	494837-46-6	494837-47-7	
494837-48-8	494837-49-9	494837-50-2	494837-51-3	494837-52-4	
494837-53-5	494837-54-6	494837-55-7	494837-56-8	494837-57-9	

494837-58-0 494837-59-1 494837-60-4 494837-61-5 494837-62-6
494837-63-7 494837-64-8 494837-65-9 494837-66-0 494837-67-1
494837-68-2 494837-69-3 494837-70-6 494837-71-7 494837-72-8
494837-73-9 494837-74-0
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum alloy excellent in machinability, and aluminum alloy material and method for production thereof)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 43 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:656045 HCAPLUS
DOCUMENT NUMBER: 139:200777
TITLE: Manufacture of foamed Al or Mg matrix with the oxide-lined pores filled with carbon dioxide gas
INVENTOR(S): Nakamura, Takashi; Ishikawa, Ryoichi; Shibata, Katsuhiro
PATENT ASSIGNEE(S): Honda Giken Kogyo Kabushiki Kaisha, Japan
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030154820	A1	20030821	US 2003-356494	20030203
US 7189276	B2	20070313		
JP 2003239027	A	20030827	JP 2002-39355	20020215
JP 3805694	B2	20060802		
EP 1338661	A1	20030827	EP 2003-2226	20030131
EP 1338661	B1	20041006		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRIORITY APPLN. INFO.: JP 2002-39355 A 20020215
AB The porous or foamed Al (or Mg) matrix is manufactured with the pores lined with Al2O3 (or MgO) shells, and containing CO2 gas from blowing. The molten metal matrix is foamed with added carbonate powder precoated with a fluoride, to form the CO2-filled pores lined with the oxide shells for increased stability. The fluoride flux is used to remove the inital oxide film on the metal-melt surface for improved pore formation. The process is suitable for manufacture of the porous Al -7% Si alloy having the d. of .apprx.1 g/cm3.
IT Metal matrix composites
(foamed; foamed Al or Mg composites manufactured with pores lined with oxide and filled with CO2)
IT 7783-40-6, Magnesium fluoride 7789-75-5, Calcium fluoride, uses
RL: MOA (Modifier or additive use); USES (Uses)
(carbonate and, for pore formation in molten metal; foamed Al or Mg matrix manufactured with pores lined with oxide and filled with CO2 gas)
IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 12635-40-4
RL: TEM (Technical or engineered material use); USES (Uses)
(foamed; foamed Al or Mg matrix manufactured with pores lined with oxide and filled with CO2 gas)
IT 1309-48-4, Magnesia, uses 1344-28-1, Alumina, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(lining, pores with, in metal matrix; foamed Al or Mg
matrix manufactured with pores lined with oxide and filled with CO2 gas)
IT 471-34-1, Calcium carbonate, processes 546-93-0, Magnesium carbonate
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(pore formation by, in molten metal matrix; foamed Al or Mg matrix manufactured with pores lined with oxide and filled with CO2 gas)
IT 124-38-9, Carbon dioxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(pores with, in metal matrix; foamed Al or Mg
matrix manufactured with pores lined with oxide and filled with CO2 gas)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 44 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:118376 HCAPLUS
DOCUMENT NUMBER: 138:174176
TITLE: Welded rolled or extruded construction products made of Al alloy with improved mechanical strength
INVENTOR(S): Raynaud, Guy-Michel; Hoffmann, Jean-Luc; Cottignies, Laurent; Pillet, Georges
PATENT ASSIGNEE(S): Fr.
SOURCE: U.S. Pat. Appl. Publ., 4 pp., Cont.-in-part of U.S. 6,444,059.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030031580	A1	20030213	US 2002-189176	20020705
FR 2731018	A1	19960830	FR 1995-2387	19950224
FR 2731018	B1	19970404		
FR 2731019	A1	19960830	FR 1995-12065	19951009
FR 2731019	B1	19970822		
WO 9626299	A1	19960829	WO 1996-FR279	19960221
W: AU, CA, CN, FI, JP, KR, NO, NZ, PL, RU, SG, TR, UA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 909828	A2	19990421	EP 1998-123582	19960221
EP 909828	A3	19990616		
R: CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
US 20010050118	A1	20011213	US 1997-875113	19970725
US 6444059	B2	20020903		
AU 2003201308	A1	20030612	AU 2003-201308	20030317
US 20050183795	A1	20050825	US 2004-856793	20040601
US 6969432	B2	20051129		

PRIORITY APPLN. INFO.:

FR 1995-2387	A	19950224
FR 1995-12065	A	19951009
WO 1996-FR279	W	19960221
US 1997-875113	A2	19970725
EP 1996-904891	A3	19960221
AU 2001-15034	A3	20010117
US 2002-189176	B1	20020705

AB Rolled or extruded products for welded constructions made of Al-Mg-Mn Al-based alloy. These products contain Mg 3.0-5.0, Mn 0.75-1.0, Fe 0-0.25, Si 0-0.25, Zn 0.02-0.40, optionally one or more of the elements Cr, Cu, Ti, Zr such that Cr <0.25,

Cu <0.20, Ti <0.20, Zr <0.20, other elements <0.05 each and <0.15 in total, where Mn + 2Zn >0.75. In the welded state, these products have improved mech. strength and resistance to fatigue without unfavorable consequences with regard to toughness and corrosion resistance, and are particularly suitable for naval construction, for industrial vehicles and for bicycle frames made of welded tubes.

IT Corrosion
(resistance; welded rolled or extruded construction products made of Al alloy with improved mech. strength and fatigue resistance)

IT Alloying
Bicycles
Fatigue, mechanical
Pipes and Tubes
Ships
Toughness
Welding of metals
(welded rolled or extruded construction products made of Al alloy with improved mech. strength and fatigue resistance)

IT 182216-69-9 182216-70-2 182216-71-3 182216-73-5 182216-75-7
182216-76-8 496921-48-3 496921-49-4 496921-50-7
496921-51-8
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(welded rolled or extruded construction products made of Al alloy with improved mech. strength and fatigue resistance)

L30 ANSWER 45 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER:	2003:945616 HCAPLUS
DOCUMENT NUMBER:	140:7579
TITLE:	Aluminum-magnesium-based alloys for casting
INVENTOR(S):	Toyota, Yusuke; Minakami, Takahiro; Fukuchi, Fumiaki; Hata, Tsunehisa; Shibata, Katsuhiro
PATENT ASSIGNEE(S):	Honda Motor Co., Ltd., Japan
SOURCE:	Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKXXAF
DOCUMENT TYPE:	Patent
LANGUAGE:	Japanese
FAMILY ACC. NUM. COUNT:	2
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003342664	A	20031203	JP 2002-157329	20020530
JP 4092138	B2	20080528		
WO 2003102257	A1	20031211	WO 2003-JP5993	20030514
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003235302	A1	20031219	AU 2003-235302	20030514
EP 1508627	A1	20050223	EP 2003-723374	20030514
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 20060137848	A1	20060629	US 2005-518151	20050927

PRIORITY APPLN. INFO.: JP 2002-157328 A 20020530
JP 2002-157329 A 20020530
WO 2003-JP5993 W 20030514

AB The alloys comprise Mg 3.5-4.5, Mn 0.8-1.5, Si <0.5, Fe <0.5 weight%, Ti, Zr [with their total content (Ti + Zr) ≥0.3 weight% and their content ratio Ti/Zr 0.3-2 weight%], and balance Al. The alloys have improved toughness. The alloys, having a preferable temperature for melt pouring 720-730°, are suitable for large-size thin castings with min. thickness 1.2-3 mm and maximum melt flow distance in a mold cavity ≥200 mm.

IT Cast alloys
RL: TEM (Technical or engineered material use); USES (Uses)
(aluminum; Al-Mg-based cast alloys with improved toughness for large-size thin castings)

IT 389625-99-4 628716-44-9 628716-45-0 628716-46-1
RL: TEM (Technical or engineered material use); USES (Uses)
(Al-Mg-based cast alloys with improved toughness for large-size thin castings)

L30 ANSWER 46 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:782867 HCAPLUS
DOCUMENT NUMBER: 139:279740
TITLE: Die-cast aluminum-magnesium alloy products having ribs
INVENTOR(S): Toyota, Yusuke; Shibata, Katsuhiro; Hata, Tsunehisa; Fukuchi, Fumiaki; Minakami, Takahiro
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003285150	A	20031007	JP 2002-87514	20020327
US 20030219618	A1	20031127	US 2003-392391	20030320

PRIORITY APPLN. INFO.: JP 2002-87514 A 20020327

AB The Al-Mg alloy product, obtained by die-casting, has a sheet main body and ≥1 rib, where the length direction of the rib intersects the alloy melt flowing direction. Preferably, the Al-Mg alloy contains Mg 3.5-4.5, Si ≤0.25, Mn 0.8-1.5, Fe ≤0.5, and Ti 0.1-0.3 weight%. Since the alloy melt at edge parts of the rib rapidly solidifies, generation of casting defects is suppressed, and the product has high strength and toughness.

IT Casting of metals
(die; die-cast Al-Mg alloy products having ribs with high strength and toughness)

IT 607356-70-7 607356-71-8 607356-72-9 607356-73-0 607356-74-1 607356-75-2 607356-76-3 607356-77-4 607356-78-5 607356-79-6
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(die-cast Al-Mg alloy products having ribs with high strength and toughness)

L30 ANSWER 47 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:390171 HCAPLUS
DOCUMENT NUMBER: 138:389216
TITLE: Manufacture of aluminum alloy billets processed by mushy-state forming for transportation equipment
INVENTOR(S): Mikubo, Shigeru; Mizouchi, Masafumi; Murayama, Yasuyuki; Iwashita, Tsunaki
PATENT ASSIGNEE(S): Kyushu Mitsui Aluminium Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003147498	A	20030521	JP 2001-338928	20011105
JP 3852915	B2	20061206		
PRIORITY APPLN. INFO.:			JP 2001-338928	20011105

AB An Al alloy billet containing Zn 3.5-7.5, Mg 0.50-4.0, Si ≤0.50, Fe ≤0.55, Ti 0.001-0.50 and/or B 0.0001-0.5, and Cu 0.30-3.0, Mn 0.03-0.80, Zr 0.03-0.35, Cr 0.03-0.35, and/or V 0.03-0.2 weight% and having dendrite arm spacing ≤200 μm is produced, and then the billet is cold die-forged for introduction of distortion at distortion ratio 5-50%, working rate ≤50 mm/s, and a temperature lower than recrystn. temperature, heated at a temperature equal to or higher than the solidus temperature, and formed under mushy state at a temperature where liquid phase ratio of the billet becomes 20-80%. The obtained Al alloy billet have uniform spheroidal structure. The billet is useful for producing automobile parts, and so on.

IT Forging
(cold forging; manufacture of Al alloy billet with uniform spheroidal structure by mushy-state forming for transportation equipment)

IT Heat treatment
(manufacture of Al alloy billet with uniform spheroidal structure by mushy-state forming for transportation equipment)

IT Metalworking
(mushy state forming; manufacture of Al alloy billet with uniform spheroidal structure by mushy-state forming for transportation equipment)

IT 527685-40-1 527685-41-2 527685-42-3 527685-43-4 527685-44-5
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of Al alloy billet with uniform spheroidal structure by mushy-state forming for transportation equipment)

L30 ANSWER 48 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:391115 HCAPLUS
DOCUMENT NUMBER: 138:389217
TITLE: Manufacture of aluminum alloy billets by semisolid forging for transportation equipments
INVENTOR(S): Mikubo, Shigeru; Mizouchi, Masafumi; Murayama, Yasuyuki; Iwashita, Tsunaki
PATENT ASSIGNEE(S): Kyushu Mitsui Aluminium Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003147497	A	20030521	JP 2001-337404	20011102
JP 3802796	B2	20060726		
PRIORITY APPLN. INFO.:			JP 2001-337404	20011102

AB The alloy comprises Cu 0-0.2, Si 0-0.5, Mg 2-6, Zn 0-0.35, Fe 0-0.5; Ti 0.001-0.5, and/or B 0.0001-0.5; Mn 0.05-1.5, Zr 0.03-0.35, and/or Cr 0.03-0.4; and Al bal. with the space of the dendrites being ≤200 μm. The billets are manufactured by cold mold-forging at distortion rate 5-50%, feeding rate ≤50 mm/s, and temperature ≤recrystg. temperature, heating to >solidus line, and holding at liquid phase ratio of 20-80%. Preferably, before forging the Al alloy is treated by homogenizing at 450-550° for 1-10 h.

IT Forging
Transportation
(manufacture of aluminum alloy billets by semisolid forging for transportation equipments)

IT Cast alloys
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of aluminum alloy billets by semisolid forging for transportation equipments)

IT 117304-61-7 528578-84-9 528578-85-0 528578-86-1 528578-87-2
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of aluminum alloy billets by semisolid forging for transportation equipments)

L30 ANSWER 49 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:558148 HCAPLUS
DOCUMENT NUMBER: 139:200678
TITLE: Investigation of the microstructure and properties of a friction stir welded Al-Mg-Sc alloy
AUTHOR(S): Lapasset, G.; Girard, Y.; Campagnac, M. H.; Boivin, D.
CORPORATE SOURCE: ONERA, Chatillon, 92230, Fr.
SOURCE: Materials Science Forum (2003), 426-432(Pt. 4, THERMEC'2003), 2987-2992
CODEN: MSFOEP; ISSN: 0255-5476
PUBLISHER: Trans Tech Publications Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The objective of this study is to provide a better knowledge of the relationships between microstructural evolution and both mech. and corrosion properties of a friction stir welded Al-Mg-Sc alloy. Microstructures were studied by optical microscopy, transmission electron microscopy, electron backscattered diffraction and microhardness measurements. Tensile testing was carried out in order to determine the global behavior of the joint as well as the local behavior of the main zones of the joint. The weld nugget appears to be the softest zone of the weld. Its undermatching is analyzed with reference to the various hardening contributions of relevance in Al-Mg-Sc alloys. It is tentatively concluded that recrystn. which occurred in the nugget at the expense of the fine unrecrystd. structure of the base metal is primarily responsible for the loss of strength of the joint. Accelerated corrosion tests did not show any evidence of susceptibility to intergranular attack.

IT Welding of metals
Welds

(friction, stir; microstructure, corrosion, and mech. properties of friction stir welded Al-Mg-Sc alloy)
IT Corrosion
(intergranular; microstructure, corrosion, and mech. properties of friction stir welded Al-Mg-Sc alloy)
IT Crystal dislocations
Ductility
Microhardness
Microstructure
Precipitation hardening
Tensile strength
Yield strength
(microstructure, corrosion, and mech. properties of friction stir welded Al-Mg-Sc alloy)
IT Recrystallization
(texture; microstructure, corrosion, and mech. properties of friction stir welded Al-Mg-Sc alloy)
IT 475150-16-4, C557
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(microstructure, corrosion, and mech. properties of friction stir welded Al-Mg-Sc alloy)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 50 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:970775 HCAPLUS
DOCUMENT NUMBER: 140:221376
TITLE: CO2 laser welding of aluminium shipbuilding industry alloys. AA 5083, AA 5383, AA 5059, and AA 6082
AUTHOR(S): Ancona, Antonio; Daurelio, G.; De Filippis, L. A. C.; Ludovico, A. D.; Spera, A. M.
CORPORATE SOURCE: Unita di Ricerca - Dipartimento Interateneo di FisicaINFM, Univ. degli Studi di Bari, Bari, 70126, Italy
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2003), 5120(XIV International Symposium on Gas Flow, Chemical Lasers, and High-Power Lasers, 2002), 577-587
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Al alloys are interesting in many and many industrial applications, from the classical aircraft industry to rail and road vehicles manufacturing (High Speed Train, Car Structure and Body). Recently much more attention for Al Alloys, 5000 and 6000 Series, was carried out by Shipbuilding Industry, especially for using in the H.S.L.C. (High Speed Light Craft). Therefore the aim of this exptl. work was to study, develop and test a reproducible CO2 laser welding procedure and technique of four specific alloys, that is AA 5083, AA 5383, AA 5059 (Al-Mg Alloys), and AA 6082 (Al-Mg-Si Alloy). Different techniques, methodologies, covering gases, nozzles, focusing lenses and mirrors, welding speed range, laser power range (1000 and 2500 W) have been carefully experimented. The melted zones properties have been evaluated by cross sections, and some visual inspections by a NIKON LUCIA Imaging System correlating each exptl. test, results and evaluations to the adopted process parameters and to the thermo-phys. properties of the tested alloys.
IT Microstructure
(CO2 laser welding of Al shipbuilding industry alloys)
IT Welding of metals

(laser; CO2 laser welding of Al shipbuilding industry alloys)
IT 12616-86-3, AA 5083 12732-13-7, AA 6082 269058-32-4, AA 5059 327622-69-5, AA 5383
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(CO2 laser welding of Al shipbuilding industry alloys)
IT 124-38-9, Carbon dioxide, uses
RL: NUU (Other use, unclassified); USES (Uses)
(CO2 laser welding of Al shipbuilding industry alloys)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 51 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:793073 HCAPLUS
DOCUMENT NUMBER: 140:203216
TITLE: Development of new high strength Al-Sc filler wires for fusion welding 7000 series aluminium aerospace alloys
AUTHOR(S): Norman, A. F.; Birley, S. S.; Prangnell, P. B.
CORPORATE SOURCE: Manchester Materials Science Centre, University of Manchester and UMIST, Manchester, M1 7HS, UK
SOURCE: Science and Technology of Welding and Joining (2003), 8(4), 235-245
CODEN: STWJFX; ISSN: 1362-1718
PUBLISHER: Maney Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB It has been reported that the transition metal Sc can improve the weldability and mech. properties of Al aerospace alloys that are normally considered to be 'unweldable'. However, little is currently known about the mechanisms by which Sc leads to such improvements. Here, the effect of the Sc concentration in the fusion zone of metal inert gas (MIG) welds in a typical 7000 series Al aerospace alloy, 7050, has been investigated in detail. It was found that at a critical Sc level (.apprx.0.4 weight%) a dramatic level of grain refinement occurs, leading to a highly uniform, ultrafine (.apprx.10 μm) grain structure across the entire the fusion zone. Grain refinement was accompanied by an increase in the concentration of solute that was retained in solid solution after solidification, which led to a reduction in the volume fraction of eutectic per unit grain boundary area and a significant age hardening response in the fusion zone. The tensile properties of single pass MIG welds, produced with an Al-Sc filler wire, were compared to welds made using com. Al filler wires recommended for welding 7000 series alloys (5087, 5180, and 5039). The Sc-containing filler wire (Al-4Mg-2.8Zn-0.8Sc-0.1Ti-0.15 weight% Zn) greatly outperformed the com. filler wires, both in terms of weld strength and ductility. Further improvements in the tensile properties of the welds were achieved by exploiting the enhanced aging response of the Al-Sc filler wires, through welding in a solution heat treated condition and using a post-weld aging treatment. The underlying metallurgical processes by which Sc brings about these improvements are discussed.
IT Grain refinement
(by scandium; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT Elongation at break
Microhardness
Yield strength
(development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT Precipitation hardening
(during weld cooling; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum

aerospace alloys)
IT Welding of metals
(electrodes; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT Welding of metals
(gas metal-arc; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT Tensile strength
(ultimate; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT 7440-20-2, Scandium, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT 37301-61-4, AA 7050
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
IT 51809-18-8, AA 5039 56036-95-4, AA 5180 660823-56-3, Aluminum 92, magnesium 4, scandium 0.8, titanium 0.1, zinc 2.8, zirconium 0.2 661475-83-8, AA 5087
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(weld filler; development of new-high strength Al-Sc alloy filler wires for fusion welding of 7000 series aluminum aerospace alloys)
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 52 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2003:567915 HCAPLUS
DOCUMENT NUMBER: 140:131940
TITLE: Selection of filler wire for arc welding of aluminum alloys of the Al-Mg and Al-Cu systems
AUTHOR(S): Ryazantsev, V. I.; Filatov, Yu. A.; Ignat'ev, Yu. E.
CORPORATE SOURCE: NIAT, Russia
SOURCE: Svarochnoe Proizvodstvo (2003), (5), 32-35
CODEN: SVAPAI; ISSN: 0491-6441
PUBLISHER: Izdatel'stvo Mashinostroenie
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Principal possibility of the new filler wires application for arc welding of aluminum alloys at the Al-Mg and Al--Cu systems is considered. Investigation results of mech. properties and alloys weldability according to different methods are shown. Recommendations for new filler wires application for different constructions from aluminum alloys are given.
IT Welding of metals
(electrodes; selection of filler wire for arc welding of aluminum alloys of Al-Mg and Al-Cu systems)
IT 12672-17-2, D20 12732-16-0, AMg6 37301-69-2, AA 1420 37301-70-5, AMg2 39412-99-2, AMg61 55321-16-9, AMg1 60999-06-6, Alloy 1205 64159-59-7, Alloy 1557 81159-87-7, AMg4 125352-52-5, AMg3 125726-63-8, AA 01570 130297-82-4, AA 1421 133554-29-7, AA 01460 135666-56-7, Alloy 01461 171757-20-3, Alloy 01217 197098-79-6, Alloy 01535 262854-04-6, Alloy 01515 262854-06-8, Alloy 01523 262854-08-0, Alloy 01545 460732-00-7, Alloy 01545K
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)

(selection of filler wire for arc welding of aluminum alloys of Al-Mg and Al-Cu systems)

L30 ANSWER 53 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:254782 HCAPLUS
DOCUMENT NUMBER: 141:228899
TITLE: Evaluation of Sc-bearing aluminum alloy C557 for aerospace applications
AUTHOR(S): Domack, Marcia S.; Dicus, Dennis L.
CORPORATE SOURCE: Langley Research Center, Hampton, VA, USA
SOURCE: NASA/TM (2002), NASA/TM-2002-211633, i-ii, 1-9
CODEN: NATMA4; ISSN: 0499-9320
DOCUMENT TYPE: Report
LANGUAGE: English
AB The performance of the Al-Mg-Sc alloy C557 was evaluated to assess its potential for a broad range of aerospace applications, including airframe and launch vehicle structures. Of specific interest were mech. properties at anticipated service temps. and thermal stability of the alloy. Performance was compared with conventional airframe aluminum alloys and with other emerging aluminum alloys developed for specific service environments. Mech. properties and metallurgical structure were evaluated for com. rolled sheet in the as-received H116 condition and after thermal exposures at 107°. Metallurgical analyses were performed to define grain morphol. and texture, strengthening ppts., and to assess the effect of thermal exposure.
IT Aerospace industry
Delamination
Fracture toughness
Microstructure
Texture (metallographic)
Thermal stability
(evaluation of mech. properties of Sc-bearing aluminum alloy C557 for aerospace applications at cryogenic temps.)
IT Tensile strength
(ultimate; evaluation of mech. properties of Sc-bearing aluminum alloy C557 for aerospace applications at cryogenic temps.)
IT 7440-20-2, Scandium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(evaluation of mech. properties of Sc-bearing aluminum alloy C557 for aerospace applications at cryogenic temps.)
IT 475150-16-4, C557
RL: PRP (Properties)
(evaluation of mech. properties of Sc-bearing aluminum alloy C557 for aerospace applications at cryogenic temps.)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 54 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:265193 HCAPLUS
DOCUMENT NUMBER: 136:298237
TITLE: Production method of automobile parts by die casting and heat treatment of aluminum alloys
INVENTOR(S): Aoyama, Shunzo; Miura, Masaki; Mikasa, Tetsuo; Fukuchi, Fumiaki; Ogawa, Tsutomu
PATENT ASSIGNEE(S): Ahresty Corp., Japan; Honda Motor Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002105611	A	20020410	JP 2000-292481	20000926

PRIORITY APPLN. INFO.: JP 2000-292481 20000926

AB Automobile parts are manufactured from Al alloys containing Cu ≤0.1, Si 7.5-10.0, Mg 0.25-0.6, Fe ≤0.25 Mn 0.5-1.2 and optionally Sr 0.01-0.02% by die casting and T5 heat treatment. The T5 heat treatment is set according to Mg content, and the heat treating temperature and heat treating time are set from a range of 403-473K and 1-6 h, resp.

IT Automobiles
(parts; production method of automobile parts by die casting and heat treatment of aluminum alloys)

IT Casting of metals
Heat treatment
(production method of automobile parts by die casting and heat treatment of aluminum alloys)

IT 406946-28-9 406946-29-0 406946-30-3 406946-31-4 406946-32-5 406946-33-6
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(production method of automobile parts by die casting and heat treatment of aluminum alloys)

L30 ANSWER 55 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:265149 HCAPLUS
DOCUMENT NUMBER: 136:282821
TITLE: Aluminum alloys for die-casting and automobile sub-frames therefrom by die-casting
INVENTOR(S): Komasaki, Toru; Sasaki, Hideto; Nishi, Naomi; Fukuchi, Fumiaki; Mikasa, Tetsuo; Kubo, Nobuo
PATENT ASSIGNEE(S): Ryobi, Ltd., Japan; Honda Motor Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002105572	A	20020410	JP 2000-293086	20000926
EP 1213366	A2	20020612	EP 2001-307824	20010914
EP 1213366	A3	20020731		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRIORITY APPLN. INFO.: JP 2000-293086 A 20000926

AB Al alloys for die-casting contain Si 8.0-9.0, Mg 0.35-0.45, Mn 0.3-0.4, Be 0.002-0.008, Fe <0.2, Cu ≤0.2, Zn ≤0.1, Ni ≤0.1 and Sn ≤0.1%. Sub-frames for automobiles are manufactured from the Al alloys by high speed, high-pressure die-casting wherein the die is evacuated to make the die cavity ≤10 Pa using a high vacuum exhaust means.

IT Automobiles
Casting of metals

(aluminum alloys for die-casting
and automobile sub-frames therefrom by die-casting)
IT 406720-09-0 406720-10-3 406720-11-4
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(aluminum alloys for die-casting
and automobile sub-frames therefrom by die-casting)

L30 ANSWER 56 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:35978 HCAPLUS
DOCUMENT NUMBER: 136:105878
TITLE: Aluminum alloy sheets for sacrificial corrosion prevention and composites therewith
INVENTOR(S): Tsuruno, Akihiro
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002012935	A	20020115	JP 2000-197090	20000629
JP 3749089	B2	20060222		

PRIORITY APPLN. INFO.: JP 2000-197090 20000629
AB Al alloy sheets, which are clad to Al or Al alloy sheets to prevent corrosion of the Al or Al alloy sheets by preferential self corrosion, contain 0.05-0.5% Ti and 0.05-0.3% Zr. The Al alloy sheets are clad to one side of core materials from other Al alloy sheets to obtain composite materials. Optionally, a braze from Al-Si alloy, Al-Si-Zn alloy or Al-Si-Mg alloy is clad to the other side of the core materials. The composite materials are used for radiators, heaters, condensers, evaporators, etc. of automobiles.
IT Composites
(aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites)
IT Condensers
Evaporators
Heaters
(automobile; aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites for)
IT Radiators
(automotive; aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites for)
IT Corrosion prevention
(sacrificial; aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites)
IT 12670-40-5 58229-40-6 389625-99-4 389626-00-0 389626-01-1 389626-02-2 389626-03-3 389626-04-4 389626-05-5 389626-06-6 389626-07-7 389626-08-8 389626-11-3 389626-12-4
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites)
IT 11099-22-2 12617-23-1 91275-79-5
RL: TEM (Technical or engineered material use); USES (Uses)
(braze; aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites)
IT 211815-54-2 389626-13-5 389626-14-6 389626-15-7 389626-16-8

RL: TEM (Technical or engineered material use); USES (Uses)
(core; aluminum alloy sheets for sacrificial corrosion prevention and aluminum alloy sheet-clad composites)

L30 ANSWER 57 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:887384 HCAPLUS
DOCUMENT NUMBER: 138:93724
TITLE: High temperature, high strain rate embrittlement of Al-Mg-Mn alloy: evidence of cleavage of an fcc alloy
AUTHOR(S): Deschamps, A.; Peron, S.; Brechet, Y.; Ehrstrom, J.-C.; Poizat, L.
CORPORATE SOURCE: LTPCM/ENSEEG, CNRS UMR 5614, St Martin d'Heres, 38402, Fr.
SOURCE: Materials Science and Technology (2002), 18(10), 1085-1091
CODEN: MSCTEP; ISSN: 0267-0836
PUBLISHER: Maney Publishing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The fracture behavior in tension of an Al-Mg-Mn alloy has been investigated. At high temps. and strain rates, intergranular brittle fracture is observed along with cleavage fracture. Intergranular fracture is related to local melting at the grain boundaries. Cleavage occurs in equal proportions on the {100} and {110} crystallog. planes. The area fraction of cleavage facets on the fracture surface has been quantified. Their initiation is shown to be related both to the liquid metal embrittlement of the grain boundaries and to the presence of brittle Mn containing particles at the grain boundaries. Cleavage fracture in an aluminum alloy also requires an inhibition of plastic flow which prevents plastic blunting at the crack tip. It is proposed that this modification of the plastic behavior is provided by the decrease in stacking fault energy at high temps. in Al-Mg alloys.
IT Brittle fracture
Embrittlement
Fracture surface morphology
Stacking fault energy
Strain
(cleavage fracture and high-temperature, high-strain rate embrittlement of Al-Mg-Mn alloy)
IT Fracture (materials)
(ductile; cleavage fracture and high-temperature, high-strain rate embrittlement of Al-Mg-Mn alloy)
IT Fracture (materials)
(intergranular; cleavage fracture and high-temperature, high-strain rate embrittlement of Al-Mg-Mn alloy)
IT 327622-69-5, AA5383
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(cleavage fracture and high-temperature, high-strain rate embrittlement of Al-Mg-Mn alloy)
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 58 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:704425 HCAPLUS
DOCUMENT NUMBER: 137:373439
TITLE: Evaluation of Sc-bearing aluminum alloy C557 for aerospace applications
AUTHOR(S): Domack, M. S.; Dicus, D. L.
CORPORATE SOURCE: NASA Langley Research Center, Hampton, VA, 23681-2199, USA

SOURCE: Materials Science Forum (2002), 396-402(Pt. 2, Aluminium Alloys 2002), 839-844
CODEN: MSFOEP; ISSN: 0255-5476
PUBLISHER: Trans Tech Publications Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The performance of the Al-Mg-Sc alloy C557 was evaluated to assess its potential for a broad range of aerospace applications, including airframe and launch vehicle structures. Of specific interest were mech. properties at anticipated service temps. and thermal stability of the alloy. Performance was compared with conventional airframe Al alloys and with other emerging Al alloys developed for specific service environments. Mech. properties and metallurgical structure were evaluated for com. rolled sheet in the as-received H116 condition and after thermal exposures at 107°. Metallurgical analyses were performed to define grain morphol. and texture, strengthening ppts., and to assess the effect of thermal exposure.

IT Aerospace industry
Fracture toughness
Microstructure
Strength
(evaluation of Sc-bearing aluminum alloy C557 for aerospace applications)

IT 7440-20-2, Scandium, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(evaluation of Sc-bearing aluminum alloy C557 for aerospace applications)

IT 475150-16-4, C557
RL: PRP (Properties)
(evaluation of Sc-bearing aluminum alloy C557 for aerospace applications)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 59 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:808251 HCAPLUS
DOCUMENT NUMBER: 135:347609
TITLE: Manufacture of nanosize aluminum alloy powders by attrition milling with a surfactant
INVENTOR(S): Upadhya, Kamleshwar; Hoffman, Wesley P.
PATENT ASSIGNEE(S): United States Dept. of the Air Force, USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6312643	B1	20011106	US 1997-957013	19971024

PRIORITY APPLN. INFO.: US 1997-957013 19971024

AB The nanosize Al-alloy powder is prepared by attrition milling under inert gas with mech. alloying in the presence of a surfactant to prevent surface oxidation, nitridation, or contamination. The attrition mill is preferably operated with tool-steel balls optionally precoated with WC, using purified Ar atmospheric The prepared Al-alloy powders have the particle or grain size of 1-250 nm, and can be consolidated into a dense billet without high-temperature sintering stage. The pressed billets can be finished for

desired microstructure and properties by hot isostatic pressing, extrusion, and/or forging, especially at 250-550° and 10-50 kpsi. The typical Al alloys for nanosize powder manufacture contain Zn 2.5-10, Mg 1.0-6.4, Cu 1.0-1.72, Zr 0.2-6.5, Ni 0.20-1.0, Fe 0.1-1.20, Si 0.05-1.5, Mn 0.1-2.5, Cr 0.1-2.5, Ti 0.02-0.5, and B 0.1-1.0%. The typical alloy with the grain size of 40-60 nm was hot-isostatically pressed to 98.5% of theor. d. and then extruded, and showed tensile strength of 90-102 kpsi, elongation of 4-6%, and Vickers microhardness of 1.39 GPa.

IT Powder metallurgy
(Al-alloy; nanosize aluminum alloy powders manufactured by attrition milling with surfactant)

IT Surfactants
(attrition milling with; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

IT Milling (size reduction)
(attrition, Al-alloy; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

IT Sintering
(low-temperature; nanosize aluminum alloy powders manufactured by attrition milling for low-temperature sintering)

IT Aluminum alloy, base
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(powder, attrition milling of; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

IT 7440-37-1, Argon, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(atmospheric, milling in; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant in Ar)

IT 12597-69-2, Steel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(balls, milling with; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

IT 12070-12-1, Tungsten carbide (WC)
RL: TEM (Technical or engineered material use); USES (Uses)
(coating, milling balls with; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

IT 371165-10-5
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(powder, attrition milling of; manufacture of nanosize aluminum alloy powders by attrition milling with surfactant)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 60 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:18779 HCAPLUS
DOCUMENT NUMBER: 134:89611
TITLE: Manufacture of composite article and insert for it
INVENTOR(S): Toyota, Yusuke; Hata, Tsunehisa; Ito, Takeo; Nagase, Katsuya; Shimizu, Hideo
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001001129	A	20010109	JP 1999-178732	19990624
PRIORITY APPLN. INFO.:			JP 1999-178732	19990624

AB The composite article consists of a light alloy cast and an

Fe-base alloy insert. The insert is coated with Cu-Ni alloy containing 10-90 weight% Ni. The insert is obtained by coating of an Fe alloy body with a Ni layer and a Cu layer (and a Ag layer) successively and heat treatment of them in a reducing atmospheric Adhesion of the insert to the cast is improved.

IT Cast alloys
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(aluminum; manufacture of composite article of light alloy cast and iron alloy insert)

IT Alloys, processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(light; manufacture of composite article of light alloy cast and iron alloy insert)

IT Casting of metals
Composites
(manufacture of composite article of light alloy cast and iron alloy insert)

IT Cast alloys
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of composite article of light alloy cast and iron alloy insert)

IT Diffusion
(thermal, preparation of copper-nickel alloy for insert coating; manufacture of composite article of light alloy cast and iron alloy insert)

IT Iron alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture of composite article of light alloy cast and iron alloy insert)

IT 39463-63-3P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(coating on insert; manufacture of composite article of light alloy cast and iron alloy insert)

IT 37321-78-1, ADC12
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of composite article of light alloy cast and iron alloy insert)

IT 12743-56-5, S25C, uses 138342-39-9, Cast iron, (JIS FC250), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture of composite article of light alloy cast and iron alloy insert)

L30 ANSWER 61 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:729831 HCAPLUS
DOCUMENT NUMBER: 135:260814
TITLE: Aluminum-magnesium die-casting alloy for automotive frames
INVENTOR(S): Spanjers, Martinus Godefridus Johannes; Haszler, Alfred Johann Peter; Sampath, Desikan
PATENT ASSIGNEE(S): Corus Aluminium Voerde G.m.b.H., Germany; Corus Aluminium Walzprodukte G.m.b.H.
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1138794	A1	20011004	EP 2001-200977	20010315
EP 1138794	B1	20070214		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR				
AT 353983	T	20070315	AT 2001-200977	20010315
US 20020006352	A1	20020117	US 2001-816686	20010326
US 6773664	B2	20040810		
US 20040161359	A1	20040819	US 2004-776605	20040212
US 6929706	B2	20050816		

PRIORITY APPLN. INFO.: EP 2000-201156 A 20000331
EP 2000-203660 A 20001020
US 2001-816686 A3 20010326

AB The alloy for casting operations comprises Mg 2.7-6.0, Mn 0.4-1.4, Zn 0.10-1.5, Zr ≤0.3, V ≤0.3, Sc ≤0.3, Ti ≤0.2, Fe ≤1.0, Si ≤1.4%, balance - aluminum. In one embodiment, the alloy containing Mg 5.8, Mn 0.54, Zn 0.51, Si 0.34, Fe 0.23, Zr 0.11%, Al - balance, had in as-cast condition the yield strength of 170 MPa, ultimate tensile strength of 305 MPa, and elongation of 14.2% and was applicable for high-pressure die-casting.

IT Elongation, mechanical
Tensile strength
Yield strength
(aluminum-magnesium die-casting alloy for automotive frames)

IT Automobiles
(bodies; aluminum-magnesium die-casting alloy for automotive frames)

IT Casting of metals
(die; aluminum-magnesium die-casting alloy for automotive frames)

IT 361484-70-0 361484-71-1 361484-72-2 361484-73-3
361484-74-4 361484-75-5 361484-76-6
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(aluminum-magnesium die-casting alloy for automotive frames)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 62 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:812752 HCAPLUS
DOCUMENT NUMBER: 135:374935
TITLE: Deformation and fracture behaviour of aluminium sections joined by means of metal-inert gas welding
AUTHOR(S): Oeser, Sabine; Memhard, Dieter; Blauel, Johann Georg
CORPORATE SOURCE: Fraunhofer Institut fuer Werkstoffmechanik, Freiburg, Germany
SOURCE: Schweissen & Schneiden (2001), 53(9), E202-E205,566,570-573
CODEN: SCSCA4; ISSN: 0036-7184
PUBLISHER: Verlag fuer Schweissen und Verwandte Verfahren DVS-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English/German

AB Large AlMgSi0.7 sections joined by means of metal-inert gas welding were examined with regard to their deformation, damage and fracture behavior. In addition to fracture-mech. investigations, tensile tests were performed on

small specimens at different strain rates. With the aid of a model and by means of numerical simulation, the deformation behavior of the whole welded joint was determined from the information about the individual material regions (weld metal, heat-affected zone and parent metal). This method can be used in order to math. predict the behavior of a joint in relation to its deformation, load-carrying capacity and defect tolerance.

IT Deformation (mechanical)
Fracture (materials)
Simulation and Modeling, physicochemical
(deformation and fracture of aluminum sections joined by metal-inert gas welding)

IT Welding of metals
(gas metal-arc; deformation and fracture of aluminum sections joined by metal-inert gas welding)

IT Welds
(metal-inert gas; deformation and fracture of aluminum sections joined by metal-inert gas welding)

IT 81988-24-1, AlMgSi0.7
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(deformation and fracture of aluminum sections joined by metal-inert gas welding)

IT 75686-78-1, AlMg4.5MnZr
RL: MOA (Modifier or additive use); USES (Uses)
(filler; deformation and fracture of aluminum sections joined by metal-inert gas welding)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 63 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:672423 HCAPLUS
DOCUMENT NUMBER: 135:307091
TITLE: Features of superplastic deformation of some aluminum alloys
AUTHOR(S): Novikov, I. I.; Portnoi, V. K.
CORPORATE SOURCE: Kafedra Metallovedeniya Tsvetnykh Metallov, Mosk. Gos. Inst. Stali Splavov, Moscow, Russia
SOURCE: Izvestiya Vysshikh Uchebnykh Zavedenii, Tsvetnaya Metallurgiya (2001), (4), 4-11
CODEN: IVUTAK; ISSN: 0021-3438
PUBLISHER: Moskovskii Gosudarstvennyi Institut Stali i Splavov
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB A group of superplastic D20, D19, AMg4 and Neopral aluminum alloys, which are characterized by high superplastic properties at temps. near solidus, was studied. They differ from other superplastic aluminum alloys (for example, 7475 alloy of the system Al-Zn-Mg-Cu) in low contribution of grain boundary sliding (7-20%) that is not characteristic for the majority of similar alloys. Working mechanisms in this group of superplastic aluminum alloys are intragranular dislocation sliding and diffusion creep, which are to result in extension of grains in the direction of deformation. This picture was observed in our expts. to the same degree as in other alloys. Qual. anal. of the grain shape and sizes under superplastic deformation of the studied alloys showed that insufficient grain boundary sliding is compensated by dynamic recrystn. to lead in dividing the extended grains in parts and generating new ones.

IT Plastic deformation
(superplastic; features of superplastic deformation of aluminum alloys)

IT 12672-17-2, D20 39331-96-9, D19 39461-63-7, AA7475 81159-87-7, AMg4 110414-16-9, Neopral

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(features of superplastic deformation of aluminum alloys)

L30 ANSWER 64 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2000:806831 HCAPLUS
DOCUMENT NUMBER: 133:338606
TITLE: Aluminum-magnesium alloys resistant to corrosive exfoliation and suitable for welded construction
INVENTOR(S): Haszler, Alfred Johann Peter; Sampath, Desikan
PATENT ASSIGNEE(S): Corus Aluminium Walzprodukte G.m.b.H., Germany
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000066800	A1	20001109	WO 2000-EP4410	20000504
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1050595	A1	20001108	EP 1999-201391	19990504
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2370160	A1	20001109	CA 2000-2370160	20000504
CA 2370160	C	20041207		
EP 1177323	A1	20020206	EP 2000-931231	20000504
EP 1177323	B1	20030409		
EP 1177323	B2	20080716		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY				
AU 750846	B2	20020801	AU 2000-49229	20000504
JP 2002543289	T	20021217	JP 2000-615421	20000504
AT 237002	T	20030415	AT 2000-931231	20000504
PT 1177323	T	20030829	PT 2000-931231	20000504
ES 2194728	T3	20031201	ES 2000-931231	20000504
ZA 2001008805	A	20021025	ZA 2001-8805	20011025
IN 2001CN01489	A	20070427	IN 2001-CN1489	20011030
US 6695935	B1	20040224	US 2002-959602	20020215
US 20040109787	A1	20040610	US 2003-725501	20031203

PRIORITY APPLN. INFO.:			
EP 1999-201391	A	19990504	
WO 2000-EP4410	W	20000504	
US 2002-959602	A1	20020215	

AB The Al-Mg alloys for welded structures resistant to corrosion contain Mg 3.5-6.0, Mn 0.4-1.2, Zn 0.4-1.5, Zr ≤0.25, Cr ≤0.3, Ti ≤0.2, Fe ≤0.5, Si ≤0.5, Cu ≤0.4%, and ≥1 of Bi 0.005-0.1, Pb 0.005-0.1, Sn 0.01-0.1, Ag 0.01-0.5, Sc 0.01-0.5, Li 0.01-0.5, V 0.01-0.3, Ce 0.01-0.3, Y 0.01-0.3, Ni 0.01-0.3, and impurities ≤0.15% total. The microalloying with Bi decreases the precipitation of Mg-containing phases on grain boundaries, resulting in corrosion resistance higher than that of the AA 5083 Al-Mg alloy. The alloy is optionally used as a drawn wire for welding filler. The alloy weld yield strength is

≥140 MPa in rolled plates or extruded shapes, especially for shipbuilding or transportation vehicles. The typical Al-Mg alloy having tensile strength of 325 MPa, yield point 150 MPa, and elongation 20.5% contains Mg 4.85, Mn 0.65, Zn 0.59, Zr 0.10, Cr 0.04, Ti 0.10, Fe 0.15, Si 0.09, Cu 0.03, and Bi 0.07%.

IT Welds
(Al-Mg alloys for welded construction resistant to corrosive exfoliation)

IT Ships
(Al-Mg alloys for welded ship construction resistant to corrosive exfoliation)

IT Vehicles
(transportation; Al-Mg alloys for welded construction resistant to corrosive exfoliation)

IT 303953-81-3
RL: TEM (Technical or engineered material use); USES (Uses)
(alloying of; Al-Mg alloys for welded construction resistant to corrosive exfoliation)

IT 303953-83-5 303953-84-6 303953-85-7 303953-86-8 303953-87-9
303953-88-0 303953-89-1 303953-90-4 303953-91-5
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloyed; Al-Mg alloys for welded construction resistant to corrosive exfoliation)

IT 303953-82-4
RL: TEM (Technical or engineered material use); USES (Uses)
(microalloying of; Al-Mg alloys for welded construction resistant to corrosive exfoliation)

IT 7440-69-9, Bismuth, uses
RL: MOA (Modifier or additive use); USES (Uses)
(microalloying with; Al-Mg alloys with Bi for welded structures resistant to corrosive exfoliation)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 65 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2000:666670 HCAPLUS
DOCUMENT NUMBER: 133:241383
TITLE: Weldable aluminium alloy structural component
INVENTOR(S): Haszler, Alfred Johann Peter; Mechsner, Klaus Alfons
PATENT ASSIGNEE(S): Corus Aluminium Walzprodukte G.m.b.H., Germany
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000054967	A1	20000921	WO 2000-EP2549	20000317
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2367752	A1	20000921	CA 2000-2367752	20000317
CA 2367752	C	20040831		
US 6337147	B1	20020108	US 2000-527832	20000317

EP 1169177 A1 20020109 EP 2000-922538 20000317
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
NZ 514456 A 20020927 NZ 2000-514456 20000317
JP 2002539328 T 20021119 JP 2000-605023 20000317
JP 4053243 B2 20080227
AU 760996 B2 20030529 AU 2000-42899 20000317
PRIORITY APPLN. INFO.: EP 1999-200831 A 19990318
WO 2000-EP2549 W 20000317

AB Improved shape and strength of the weld in a welded structure are obtained by use of a weldable aluminum product comprising a structural component which is a sheet, a plate or an extruded body and is made of an aluminum alloy containing not more than 1.5 wt % Zn. This component has, adhered on at least one side, a cladding layer made of an AA7xxx-series alloy having a corrosion potential lower than that of said alloy of said structural component. The alloy of the structural component is preferably an AA5xxx-series alloy containing Mg in the range 2 to 6 wt %.

IT Transportation
(marine; weldable aluminum alloy structural component)

IT Aerospace industry
Automobiles
Construction materials
Corrosion-resistant materials
Welding
Welding of metals
(weldable aluminum alloy structural component)

IT 7439-95-4, Magnesium, uses 7440-66-6, Zinc, uses
RL: MOA (Modifier or additive use); USES (Uses)
(weldable aluminum alloy structural component)

IT 12616-73-8, AA 5183 12616-86-3, AA 5083 12675-84-2, AA 7072 269058-32-4, AA 5059 292606-84-9 292606-85-0 292606-86-1
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(weldable aluminum alloy structural component)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 66 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2000:314627 HCAPLUS
DOCUMENT NUMBER: 132:324736
TITLE: Aluminum-alloy plates for large weldable parallel-plate structures with internal stiffener ribs
INVENTOR(S): Haszler, Alfred Johann Peter; Sampath, Desikan; Mechsner, Klaus Alfons
PATENT ASSIGNEE(S): Hoogovens Aluminium Walzprodukte G.m.b.H., Germany
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000026020	A1	20000511	WO 1999-EP8316	19991029
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,				

DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2349004	A1	20000511	CA 1999-2349004		19991029
CA 2349004	C	20060613			
BR 9914953	A	20010724	BR 1999-14953		19991029
EP 1133390	A1	20010919	EP 1999-955933		19991029
EP 1133390	B1	20040310			

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

TR 2001011/1	T2	20010921	TR 2001-1171		19991029
AU 747689	B2	20020516	AU 2000-12681		19991029
JP 2003502167	T	20030121	JP 2000-579436		19991029
CN 1103280	C	20030319	CN 1999-812945		19991029
AT 261354	T	20040315	AT 1999-955933		19991029
PT 1133390	T	20040730	PT 1999-955933		19991029
ES 2214898	T3	20040916	ES 1999-955933		19991029
RU 2237578	C2	20041010	RU 2001-114506		19991029
ZA 2001002910	A	20011012	ZA 2001-2910		20010409
NO 2001002107	A	20010427	NO 2001-2107		20010427
US 6848233	B1	20050201	US 2001-830448		20010730
PRIORITY APPLN. INFO.:			EP 1998-203665	A	19981030
			EP 1999-201767	A	19990604
			WO 1999-EP8316	W	19991029

AB The large Al-alloy panel is manufactured from 2 parallel plates with the intermediate corrugated stiffener sheet made of the Al alloy containing Mg 1.5-6.0, Mn 0.3-1.4, Zn 0.4-5.0, Fe ≤0.5, Si ≤0.5, Zr ≤0.30, and optionally Cr 0.05-0.30, Ti 0.01-0.20, V 0.05-0.25, Ag 0.05-0.40, and/or Cu ≤0.40% with impurities at ≤0.05 each and 0.15% total. The corrugated stiffener sheet is preferably 0.2-1.0 mm thick, and is heat treated for the H-temper or O-anneal with the yield/tensile strength ratio of 0.4-0.9, and having good rolling and bending formability. The Al-alloy stiffener sheet is optionally clad with higher-purity Al alloy, and after corrugation is welded to the parallel plates (especially by laser-beam welding) to manufacture the structural laminate suitable for marine-ship decks and panel applications. The typical Al alloy for the stiffener sheet .apprx.1 mm thick contains Mg 5.20, Mn 0.84, Zn 0.50, Fe 0.19, Si 0.11, Zr 0.13, Cr 0.049, Ti 0.015, and Cu 0.013%, and shows tensile strength of .apprx.315 MPa in the O-temper, vs. only .apprx.157 MPa for the AA 3004 alloy.

IT Construction materials
(boards, parallel-plate; aluminum-magnesium alloy for corrugated stiffener core in parallel-plate panels)

IT Welding of metals
(laser, of Al-alloy sheets; aluminum-magnesium alloy for clad-sheet core welded in parallel-plate panels)

IT Cladding
(of Al-alloy sheets; aluminum-magnesium alloy for clad-sheet stiffener core in parallel-plate panels)

IT Ships
(structural panels for; aluminum-magnesium alloy for clad-sheet core welded in parallel-plate panels)

IT 267005-59-4
RL: TEM (Technical or engineered material use); USES (Uses)
(alloying of; aluminum-magnesium alloy for corrugated stiffener core in parallel-plate panels)

IT 267005-60-7 267005-61-8
RL: TEM (Technical or engineered material use); USES (Uses)
(for panel laminates; aluminum-magnesium alloy for corrugated stiffener core in parallel-plate panels)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 67 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:116174 HCAPLUS
DOCUMENT NUMBER: 134:196601
TITLE: High temperature cleavage in Al-Mg alloys
AUTHOR(S): Peron, S.; Brechet, Y.; Deschamps, A.; Ehrstrom, J. C.; Poizat, L.
CORPORATE SOURCE: Pechiney Centre de Recherches de Voreppe, Voreppe, 38341, Fr.
SOURCE: Advances in Mechanical Behaviour, Plasticity and Damage, Proceedings, Tours, France, Nov. 7-9, 2000 (2000), Volume 2, 1297-1302. Editor(s): Miannay, Dominique. Elsevier Science Ltd.: Oxford, UK. CODEN: 69AYFC
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The fracture behavior of a high strength 5000 series aluminum alloy has been investigated in conditions relevant to industrial reversible hot rolling. To do so, a ductility test implemented on a servo-hydraulic compression machine was used. The material was deformed in the range 490°C to 560°C at a high strain rate (up to 25 s-1). Under these conditions, the material exhibits a ductile to brittle transition. The brittle behavior is due to both intergranular and transgranular cleavage like fracture. Particular attention was paid on the latter mechanism. Examns. of the fracture surface with the SEM directly after deformation or after etch-pitting the surface were performed. Cross sections were also examined in the optical microscope after anodic oxidation, to confirm the transgranular aspect of fracture. The corresponding mechanism is found to be cleavage, as transgranular planar fracture surfaces are crystallog. well defined. Cleavage takes place both on (100) and (110) planes with the same frequency, independently of the deformation conditions in the cleavage range. A possible scenario for the appearance of high temperature cleavage has been proposed. It involves liquid metal embrittlement (LME) at some grain boundaries due to the fusion of deep eutectics. This LME leads to sharp cracks able to initiate cleavage under fast deformation. This scenario is consistent with metallog. observations of local melting as well as with the dependence of the overall features of fracture with temperature and strain rates.
IT Structural phase transition
(ductile-to-brittle; high-temperature cleavage in Al-Mg alloys)
IT Ductility
Embrittlement
Fracture (materials)
Fracture surface morphology
Plastic deformation
Strain
(high-temperature cleavage in Al-Mg alloys)
IT 327622-69-5, AA 5383
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(high-temperature cleavage in Al-Mg alloys)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 68 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1999:549420 HCAPLUS
DOCUMENT NUMBER: 131:160372
TITLE: High-strength aluminum-magnesium alloys for application in welded construction
INVENTOR(S): Haszler, Alfred Johann Peter; Sampath, Desikan
PATENT ASSIGNEE(S): Hoogovens Aluminium Walzprodukte G.m.b.H., Germany
SOURCE: PCT Int. Appl., 20 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9942627	A1	19990826	WO 1999-EP1011	19990218
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9927257	A	19990906	AU 1999-27257	19990218
EP 1078109	A1	20010228	EP 1999-907554	19990218
EP 1078109	B1	20030122		
EP 1078109	B2	20060913		
R: AT, BE, CH, ES, FR, GB, IT, LI, NL, SE, PT				
TR 200003222	T2	20010921	TR 2000-3222	19990218
AT 231562	T	20030215	AT 1999-907554	19990218
PT 1078109	T	20030630	PT 1999-907554	19990218
ES 2191418	T3	20030901	ES 1999-907554	19990218
BR 9909219	A	20050412	BR 1999-9219	19990218
ZA 9901360	A	19990820	ZA 1999-1360	19990219
NO 2000004154	A	20000818	NO 2000-4154	20000818
US 20030145912	A1	20030807	US 2002-299814	20021120

PRIORITY APPLN. INFO.:
EP 1998-200560 A 19980220
WO 1999-EP1011 W 19990218
US 2000-622157 B1 20001016

AB The Al-Mg alloys suitable for extrusions or rolled strip contain Mg >3.0 to 4.5 (especially 3.5-4.5), Mn 0.4-1.2, Zn 0.4-1.7, Zr 0.05-0.25, Cr ≤0.3, Ti ≤0.2, V ≤0.2, Li ≤0.5, Sc ≤0.5, Fe ≤0.5, Si ≤0.5, Cu ≤0.15, and Ag ≤0.4% with impurities ≤0.05 each and ≤0.15% total. The Al- Mg alloy is suitable for manufacture of high-strength containers or welded structural parts, especially for operation near 80-100°. The alloy ingot is typically preheated at 300-530° to decrease segregation, hot rolled, and optionally finished by cold rolling, and the resulting strip is heat treated for high-strength applications and corrosion resistance. The typical alloy for manufacture of the strip 1.2 mm thick with longitudinal tensile strength of 292 MPa contains Mg 3.9, Mn 0.74, Zn 0.53, Zr 0.13, Cr 0.05, Ti 0.02, Fe 0.31, Si 0.14, and Cu 0.05%. The alloy strength and ductility are comparable to those of the low-Zn AA 5083 Al-alloy strip susceptible to sensitized and intergranular corrosion.

IT Welding of metals
(aluminum alloys; aluminum-magnesium alloy for high-strength strip and welded construction)

IT 237423-56-2
RL: TEM (Technical or engineered material use); USES (Uses)
(alloying of; aluminum-magnesium alloy for high-strength strip and welded construction)

IT 237423-57-3 237423-58-4 237423-59-5 237423-60-8
RL: TEM (Technical or engineered material use); USES (Uses)
(aluminum-magnesium alloy for high-strength strip and welded construction)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 69 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1999:344803 HCAPLUS
DOCUMENT NUMBER: 130:355579
TITLE: Pressure-cast aluminum alloy structural parts
INVENTOR(S): Winkler, Reinhard; Wust, Jurgen
PATENT ASSIGNEE(S): Alusuisse Technology & Management AG, Switz.; Alcan Technology & Management AG
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 918095	A1	19990526	EP 1997-810884	19971120
EP 918095	B1	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PT 918095	T	20030630	PT 1997-810884	19971120
ES 2192257	T3	20031001	ES 1997-810884	19971120
HU 9802626	A1	19990928	HU 1998-2626	19981112
HU 220128	B	20011128		
PL 186936	B1	20040430	PL 1998-329760	19981118
BR 9804709	A	19991109	BR 1998-4709	19981119
PRIORITY APPLN. INFO.:			EP 1997-810884 A	19971120

AB The Al alloy contains Sc 0.05-0.4 and Zr 0.1-0.4 in addition to Si ≤0.5, Fe ≤0.1, Mn 0.1-1.6, Mg ≤5.0, Ti ≤0.3, and Zn ≤0.1%. The alloy is suitable for production of structural parts (especially crash elements and space frame knots for motor vehicles and automobiles) by pressure casting. The parts can be used at ≤180°. Requirements on strength and ductility are fulfilled already in the as-cast condition and optionally after heat treatment at 200-400° but without high-temperature annealing.

IT Cast alloys
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(aluminum; pressure-cast aluminum alloy crash elements for automobiles)

IT Automobiles
(parts; pressure-cast aluminum alloy for)

IT Safety
(pressure-cast aluminum alloy crash elements for automobiles)

IT 7440-20-2, Scandium, uses 7440-67-7, Zirconium, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(in pressure-cast aluminum alloy)

IT 224648-10-6 224648-13-9 224648-15-1
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(pressure-cast aluminum alloy crash elements for automobiles)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 70 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1999:660710 HCAPLUS
DOCUMENT NUMBER: 132:38694
TITLE: Application of metal matrix composites to automotive manufacturing

AUTHOR(S): Hayashi, Tadayoshi; Shibata, Katsuhiro; Shibata, Kazuo
CORPORATE SOURCE: Honda R&D Co., Ltd., Tochigi, 321-33, Japan
SOURCE: Advances in Science and Technology (Faenza, Italy) (1999), 22(Advanced Structural Fiber Composites), 381-392
CODEN: ASETE5
PUBLISHER: Techna
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 6 refs. is given of the application of MMCs for autoparts and of the reasons why their application has not been expanded. After considering the issues, two examples of studies on MMCs for future applications are described. For engine block applications, the authors explain results of a process improvement which enables the usual high-pressure die-casting process to be used. For brake disk applications the authors describe results of an MMC brake disk performance in an automotive application.

IT Metal matrix composites
(application of Al alloy metal matrix composites to automotive manufacture)

IT Engines
(cylinder blocks, automobile; application of Al alloy metal matrix composites to automotive manufacture)

IT Casting of metals
(die, of composites; application of Al alloy metal matrix composites to automotive manufacture)

IT Brakes (mechanical)
(disk, automobile; application of Al alloy metal matrix composites to automotive manufacture)

IT 1344-28-1, Alumina, uses 12616-75-0, Aa6061 37263-88-0
RL: DEV (Device component use); USES (Uses)
(composites; application of Al alloy metal matrix composites to automotive manufacture)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 71 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1998:493351 HCAPLUS
DOCUMENT NUMBER: 129:139368
ORIGINAL REFERENCE NO.: 129:28416h,28417a
TITLE: Beam support made of a light alloy for construction industry
INVENTOR(S): Torimizu, Yoshimei
PATENT ASSIGNEE(S): Furukawa Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10195876	A	19980728	JP 1997-170794	19970627
PRIORITY APPLN. INFO.:			JP 1996-304696 A	19961115

AB A beam support installed in trenches to support walls comprises a shaft that can move reciprocally in a cylindrical body and side plates for driving and locking the shaft. The plates and the shaft are made of an Al alloy, preferably, containing Mg 2.1-2.9, Si 0.3-0.4, Fe 0.3-0.5, Cu 1.2-2.0, Mn 0.25-0.35, Zn 5.1-7.0, Cr 0.18-0.28, and Zr + Ti ≤0.25%, or Mg 0.1-3.7, Si 0.06-0.7, Fe 0.08-1.4, Cu

0.05-2.6, Mn ≤0.8, Zn 0.8-9.7, Cr 0-0.35, Zr 0-0.5, and Ti 0-0.2%. The difference in hardness between the shaft and the locking plate is -60~30.

IT Shafts
(beam support made of light alloy for construction industry)

IT Hardness (mechanical)
(of shaft and lock plate; beam support made of light alloy for construction industry)

IT 12616-75-0, Aa6061 12627-49-5, Aa7075 89701-09-7, Aa6066 210692-09-4 210692-10-7 210692-11-8 210692-12-9 210692-13-0 210692-15-2 210692-17-4 210692-20-9
RL: TEM (Technical or engineered material use); USES (Uses)
(beam support made of aluminum alloy for construction industry)

L30 ANSWER 72 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1998:794168 HCAPLUS
DOCUMENT NUMBER: 130:84627
TITLE: Dependence of the thermal conductivity of alloys of the Al-Mg system on the composition and temperature
AUTHOR(S): Vertogradskii, V. A.; Bel'skayal, I. N.
CORPORATE SOURCE: All-Russia Institute of Aircraft Materials (VIAM), Moscow, Russia
SOURCE: Metal Science and Heat Treatment (Translation of Metallovedenie i Termicheskaya Obrabotka Metallov) (1998), 40(5-6), 231-233
CODEN: MHTRAN; ISSN: 0026-0673
PUBLISHER: Consultants Bureau
DOCUMENT TYPE: Journal
LANGUAGE: English

AB It is a common practice to study the dependencies of the phys. properties of alloys on the temperature and the composition without generalizing the results.
It is more logical to study these dependences complexly, i.e., as fragments of so-called composition-temperature-property diagrams (whole diagrams in the ideal case). Today's math. and computer possibilities provide processing of the dependences of any property on the temperature and composition even for multicomponent systems. Math. analogs replace the composition-property graphical diagrams. The present work generalizes data on the thermal conductivity of 11 alloys of the Al-Mg system that contain 1 to 14% Mg in the temperature range of 20-350°C. The results are obtained in the form of a single regression equation that describes the data on the thermal conductivity within the range 86-190 W/(m · K) with a standard deviation of 0.7%. The choice of the regression equation is based on the existence of an analogy between heat transfer and elec. transfer in metallic systems and on dependences of the elec. resistivity on the temperature and the concentration of the alloying elements known from solid-state physics.

IT Thermal conductivity
(dependence of thermal conductivity of Al-Mg alloys on composition and temperature)

IT Electric resistance
Heat transfer
(in modeling of dependence of thermal conductivity of Al-Mg alloys on composition and temperature)

IT Simulation and Modeling, physicochemical
(regressive; dependence of thermal conductivity of Al-Mg alloys on composition and temperature)

IT 12732-16-0, AMG6 12773-43-2, AL8 37301-70-5, AMG2 55321-16-9, AMG1 61089-26-7, AL13 72267-09-5, AMG5 81159-87-7, AMG4

125352-52-5, AMG3 125726-63-8, Alloy 1570 135667-16-2, VAL16
218268-83-8, AL22 alloy
RL: PRP (Properties)
(dependence of thermal conductivity of Al-Mg alloys on composition and temperature)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 73 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1997:678977 HCAPLUS
DOCUMENT NUMBER: 127:321810
ORIGINAL REFERENCE NO.: 127:63027a,63030a
TITLE: Aluminum-magnesium alloys for high-strength plates and large welded structures
INVENTOR(S): Haszler, Alfred Johann Peter; Sampath, Desikan
PATENT ASSIGNEE(S): Hoogovens Aluminium Walzprodukte G.m.b.H., Germany
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 799900	A1	19971008	EP 1996-200967	19960404
R: NL				
CA 2250977	A1	19971016	CA 1997-2250977	19970327
CA 2250977	C	20020326		
WO 9738146	A1	19971016	WO 1997-EP1623	19970327
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN				
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9722933	A	19971029	AU 1997-22933	19970327
AU 735772	B2	20010712		
EP 892858	A1	19990127	EP 1997-915470	19970327
EP 892858	B1	20001102		
EP 892858	B2	20070815		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, FI				
CN 1217030	A	19990519	CN 1997-194225	19970327
CN 1061697	C	20010207		
JP 11507102	T	19990622	JP 1997-535649	19970327
JP 3262278	B2	20020304		
BR 9708513	A	20000104	BR 1997-8513	19970327
NZ 331972	A	20000428	NZ 1997-331972	19970327
TR 9801984	T2	20000721	TR 1998-1984	19970327
AT 197317	T	20001115	AT 1997-915470	19970327
ES 2153189	T3	20010216	ES 1997-915470	19970327
PT 892858	T	20010430	PT 1997-915470	19970327
RU 2194787	C2	20021220	RU 1998-119895	19970327
IN 1997MA00692	A	20060929	IN 1997-MA692	19970402
ZA 9702889	A	19971103	ZA 1997-2889	19970404
NO 9804634	A	19981002	NO 1998-4634	19981002
NO 326337	B1	20081110		
KR 2000005424	A	20000125	KR 1998-708178	19981002
US 6238495	B1	20010529	US 1999-155652	19990224
HK 1019235	A1	20010713	HK 1999-104293	19991004
GR 3035225	T3	20010430	GR 2001-400041	20010111

US 20010025675	A1	20011004	US 2001-785523	20010220
US 6342113	B2	20020129		

PRIORITY APPLN. INFO.:

EP 1996-200967	A	19960404
EP 1997-915470	A	19970327
WO 1997-EP1623	W	19970327
US 1999-155652	A1	19990224

AB The high-strength Al-Mg alloys contain Mg 4.5-7, Mn 0.4-1.2, Zn 0.4-5, Zr ≤0.3, Cr ≤0.3, Ti ≤0.2, Fe ≤0.5, Si ≤0.5, and Cu ≤0.4% with residual impurities at ≤0.05 each and ≤0.15% total. The alloy ingots are preheated for homogenizing and hot rolled at 400-530°, and the resulting plates are cold rolled with intermediate annealing and finally annealed at 200-550°. The low-d. alloy typically contains Mg 5.2-5.6, Mn 0.7-0.9, and Zn 0.4-1.5%, and shows increased strength compared with that of AA 5083 alloy, as well as similar resistance to corrosion and pitting. The typical alloy with tensile strength of 404 MPa after heat treatment to H321 temper contains Mg 4.7, Mn 0.8, Zn 0.6, Zr 0.13, Ti 0.12, Fe 0.23, Si 0.13, and Cu 0.1%, vs. only 305 MPa for the AA 5083 alloy.

IT Welding of metals
(structural; aluminum-magnesium alloys for cold-rolled plates and welded construction)

IT 197586-37-1 197586-38-2 197586-39-3 197586-40-6
RL: TEM (Technical or engineered material use); USES (Uses)
(high-strength; aluminum-magnesium alloys for cold-rolled plates and welded structures)

IT 12616-86-3, AA 5083
RL: TEM (Technical or engineered material use); USES (Uses)
(modification of, with zinc; aluminum-magnesium alloys for cold-rolled plates and welded structures)

L30 ANSWER 74 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER:	1996:263352 HCAPLUS
DOCUMENT NUMBER:	124:296246
ORIGINAL REFERENCE NO.:	124:54779a,54782a
TITLE:	Mechanisms of superplastic deformation of aluminum alloy AMg4
AUTHOR(S):	Novikov, I. I.; Nikiforov, A. O.; Polkin, V. I.; Levchenko, V. S.
CORPORATE SOURCE:	Mosk. Gos. Inst. Stali Splavov, Russia
SOURCE:	Izvestiya Vysshikh Uchebnykh Zavedenii, Tsvetnaya Metallurgiya (1996), (1), 43-8 CODEN: IVUTAK; ISSN: 0021-3438
PUBLISHER:	Severo-Kavkazskii Gosudarstvennyi Tekhnologicheskii Universitet
DOCUMENT TYPE:	Journal
LANGUAGE:	Russian

AB An aluminum based alloy containing 4,3% Mg, 0,6% Mn and 0,2% Cr has been studied. The strain rate dependences of flow stress and index m at superplastic deformation (SPD) were determined within temperature range 500-570 °C. The maximum of the total elongation (1000%) and the index m (0,75) correspond with temperature 570 °C, which is 0,98 Tm. Shifts of marker scratches at grain boundaries and an increase in distance between transverse scratches within grains, as a result of SPD, were measured by SEM technique. The contribution of grain boundary sliding into the total strain determined under optimal conditions (T = 570 °C, ε = 1·10-3 s-1) is very small (6%) and increases with a decrease in SPD temperature A conclusion is made that intragranular dislocation slip and diffusion creep are the main SPD mechanisms at 570 °C, and grain equiaxiality is maintained by dynamic recrystn.

IT 81159-87-7, AMg4
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(mechanisms of superplastic deformation of aluminum alloy)

L30 ANSWER 75 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:934047 HCAPLUS
DOCUMENT NUMBER: 124:63743
ORIGINAL REFERENCE NO.: 124:11833a,11836a
TITLE: Manufacture of painted aluminum alloy sheets for high-strength stay-on tabs of cans
INVENTOR(S): Kaneda, Yutaka; Okamoto, Fumito
PATENT ASSIGNEE(S): Kobe Steel Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07197217	A	19950801	JP 1993-352091	19931229
PRIORITY APPLN. INFO.:			JP 1993-352091	19931229

AB A slab of Al alloy containing Mg 3.5-5.5, Mn 0.2-1.0, Cu 0.05-0.4, and optionally Si ≤0.30, Fe ≤0.4, Cr ≤0.25, Zn ≤0.35, Zr ≤0.15, and Ti ≤0.20 is homogenized at 450-550°, hot rolled, cold rolled, annealed, cold rolled at a draft of 65-85% to give a maximum size of crystal grain (as viewed form the surface of the rolled sheet) ≤30 μm, painted and baked with a maximum heating temperature affecting the sheet of 200-280°.
IT Cans
(manufacture of painted aluminum alloy sheets for high-strength stay-on tabs of cans)
IT 170635-47-9 170635-48-0 172274-25-8
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(manufacture of painted aluminum alloy sheets for high-strength stay-on tabs of cans)

L30 ANSWER 76 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1995:833447 HCAPLUS
DOCUMENT NUMBER: 124:183182
ORIGINAL REFERENCE NO.: 124:33786h,33787a
TITLE: Clad aluminum alloys with pitting corrosion resistance for working fluid pipes
INVENTOR(S): Itagaki, Takeshi; Toma, Ken
PATENT ASSIGNEE(S): Mitsubishi Aluminium, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07179970	A	19950718	JP 1993-346271	19931222
PRIORITY APPLN. INFO.:			JP 1993-346271	19931222

AB The clad Al alloys consist of 0.7-2% Mn-containing Al-Mn alloy cores having 0.2-10.6% Mn-containing Al-Mn alloy inner layers and Al or ≤0.1% Mn-containing Al alloy outer layers on at least one side of the Al-Mn alloy core. The cores

may be from Al alloys containing Mn 0.7-2, and optionally Mg 0.1-5, Si 0.3-2, Cu 0.01-0.2, Zr 0.05-0.25, Ti 0.05-0.25, V 0.05-0.25, Cr 0.05-0.25, and/or Fe 0.5-1.5%. The inner layers may be from Al alloys containing Mn 0.2-0.6, and optionally Mg 0.1-5, Si 0.3-2, and/or Cu 0.01-0.2%. The outer layers may be from Al alloys containing Mn ≤0.1, and optionally Zn 0.1-2, In 0.005-0.05, Sn 0.05-0.2, Mg 0.1-5, Si 0.3-2, and/or Cu 0.01-0.2%.

IT Cladding
Pipes and Tubes
(low-Mn Al alloy cores having 2-layer claddings containing high-Mn Al alloy inner and Al outer for pitting corrosion resistance for pipes)

IT 12670-22-3 12780-47-1 56847-73-5 126744-83-0 169256-35-3
169256-36-4 169256-37-5 169256-38-6 169256-39-7 169256-40-0
169361-47-1 169361-48-2
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(cladding inner; low-Mn Al alloy cores having 2-layer claddings containing high-Mn Al alloy inner and Al outer for pitting corrosion resistance for pipes)

IT 7429-90-5, Aluminum, processes 12616-96-5 12665-79-1
39285-45-5 50944-85-9 52361-37-2 59392-25-5 71040-31-8
96742-19-7 169256-41-1 169256-42-2 169256-43-3 169256-44-4
169256-45-5 169256-46-6 169256-47-7 169256-48-8 169361-49-3
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(cladding outer; low-Mn Al alloy cores having 2-layer claddings containing high-Mn Al alloy inner and Al outer for pitting corrosion resistance for pipes)

IT 12670-19-8 12673-16-4 86666-27-5 133014-13-8 138438-97-8
164016-19-7 165740-40-9 169256-22-8 169256-23-9 169256-24-0
169256-25-1 169256-26-2 169256-27-3 169256-28-4 169256-29-5
169256-30-8 169256-31-9 169256-32-0 169256-33-1 169256-34-2
169361-45-9 169361-46-0
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(core; low-Mn Al alloy cores having 2-layer claddings containing high-Mn Al alloy inner and Al outer for pitting corrosion resistance for pipes)

L30 ANSWER 77 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1994:13100 HCAPLUS
DOCUMENT NUMBER: 120:13100
ORIGINAL REFERENCE NO.: 120:2601a,2604a
TITLE: High-strength and high corrosion-resistant aluminum alloy clad materials for low-temperature brazing
INVENTOR(S): Kishino, Kunihiko; Yamaguchi, Motoyoshi
PATENT ASSIGNEE(S): Furukawa Aluminium, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05214475	A	19930824	JP 1991-56208	19910123

PRIORITY APPLN. INFO.: JP 1991-56208 19910123
AB Al alloys containing Mg 1.5-3.5 and Cr 0.01-0.35, Mn 0.01-1.80, Zr 0.01-0.35, Hf 0.03-0.5, V 0.03-0.35, Ni 0.03-3.5, Fe

0.02-1.5, and/or Ti 0.005-0.35, and optionally Si 0.03-2.5%, where Cu amount is controlled to <0.5%, are coated with brazes (which melt at ≤500°) on ≥1 side to give the materials. The materials may comprise a sacrificial layer on 1 side. The materials are useful for automobile heat exchangers.

IT Heat-exchange apparatus
(automobile, aluminum alloy clads for, for low-temperature brazing)

IT Cladding
(of aluminum alloys, with brazes, for heat exchangers)

IT 42611-25-6 106902-02-7
RL: USES (Uses)
(braze, aluminum alloy clad with, for heat exchangers)

IT 151789-43-4 151789-44-5 151789-45-6 151789-46-7
RL: USES (Uses)
(clad, with braze coatings, for heat exchangers)

IT 12675-84-2
RL: USES (Uses)
(sacrificial layer, aluminum alloy clad with, for heat exchangers)

L30 ANSWER 78 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:217890 HCAPLUS
DOCUMENT NUMBER: 118:217890
ORIGINAL REFERENCE NO.: 118:37481a,37484a
TITLE: Manufacture of aluminum-magnesium -silicon alloy nuts for caulking
INVENTOR(S): Fukuchi, Fumiaki; Yasunaga, Kunihiro; Sato, Masakazu; Umemura, Hironori
PATENT ASSIGNEE(S): Honda Motor Co., Ltd., Japan; Pop Rivet Fastener Kk
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05033108	A	19930209	JP 1991-189714	19910730
JP 3069973	B2	20000724		
PRIORITY APPLN. INFO.:			JP 1991-189714	19910730

AB The nuts consisting of a tubular body with a flange on 1 end and helical groove on the inner wall of the other end are manufactured from Al-Mg-Si alloy and are solution annealed in reducing atmospheric at 490-520° for 2-4 h or in air at 490-510° for 2-4 h. The manufactured caulking nuts maintain fastening torque under crucial service conditions.

IT Nuts (mechanical)
(caulking, aluminum-magnesium-silicon alloy
, manufacture of, solution annealing for fatigue strength in)

IT Annealing
(solution, of aluminum-magnesium-silicon alloy caulking nuts, for fatigue strength)

IT 12615-50-8P 12616-75-0P, AA6061
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(caulking nuts, solution annealing in manufacture of, for fatigue strength)

L30 ANSWER 79 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:259431 HCAPLUS
DOCUMENT NUMBER: 118:259431
ORIGINAL REFERENCE NO.: 118:45023a,45026a

TITLE: Aluminum alloys with torsion-bending fatigue resistance and formability for sheets and pulleys
INVENTOR(S): Ogura, Kenichi; Kanemitsu, Yukio
PATENT ASSIGNEE(S): Furukawa Aluminium, Japan; Kanemitsu Kk
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04371545	A	19921224	JP 1991-174383	19910619
PRIORITY APPLN. INFO.:			JP 1991-174383	19910619

AB The alloys contain Mg 2-6, Ti 0.005-0.2 and/or B 0.0005-0.02%, and optionally Mn 0.02-2.0, Cu 0.01-2.0, Cr 0.02-1.0, and/or Zr 0.01-0.3, and impurities such as Si ≤0.2, Fe ≤0.2, and Zn ≤0.5%.
IT Pulleys
(aluminum-magnesium alloy sheets for, torsion-bending fatigue resistance and formability of)
IT 145077-00-5 145077-01-6 145077-02-7 145077-03-8 147928-73-2 147978-43-6 147978-44-7
RL: USES (Uses)
(for sheets and pulleys, torsion-bending fatigue resistance and formability of)

L30 ANSWER 80 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:43792 HCAPLUS
DOCUMENT NUMBER: 118:43792
ORIGINAL REFERENCE NO.: 118:7827a,7830a
TITLE: Aluminum alloys for heat rollers in copying or printing machines
INVENTOR(S): Aiura, Sunao; Kaita, Kazuhiro; Takezoe, Osamu
PATENT ASSIGNEE(S): Kobe Steel, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04210444	A	19920731	JP 1990-410437	19901212
PRIORITY APPLN. INFO.:			JP 1990-410437	19901212

AB The alloys contain Fe 0.1-0.4, Cu 0.15-0.6, Mn 0.6-1.5, Mg 3.0-5.5, Si <0.5, and optionally Zr 0.05-0.2%. The alloys optionally contain 0.005-0.1% Ti.
IT Copying process
(apparatus, heat rollers in, aluminum alloys for)
IT Printing apparatus
(rollers, heat, aluminum alloys for)
IT 7440-32-6, Titanium, uses 7440-67-7, Zirconium, uses
RL: USES (Uses)
(aluminum alloys containing, for heat rollers of copiers and printers)
IT 145418-38-8 145418-39-9 145418-40-2 145418-41-3 145418-42-4 145418-43-5 145418-44-6 145418-45-7
RL: USES (Uses)
(for heat rollers of copiers and printers)

L30 ANSWER 81 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1993:454005 HCAPLUS
DOCUMENT NUMBER: 119:54005
ORIGINAL REFERENCE NO.: 119:9685a,9688a
TITLE: Effect of scandium on mechanical properties of welded joints of aluminum alloy 1420
AUTHOR(S): Labur, T. M.; Ishchenko, A. Ya.
CORPORATE SOURCE: Inst. Elektrosvarki im. Patona, Ukraine
SOURCE: Avtomaticheskaya Svarka (1992), (11-12), 53-4
CODEN: AVSVAU; ISSN: 0005-111X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Ar-arc welding of Al alloy 1420 with filler wires AMg4 and AMg63 containing ≤0.5% Sc increased weld strength at satisfactory toughness . The Sc-alloyed filler wires gave weld strength factor 0.68-0.72, nominal fracture stress 70-75%, and 2.5-4.0 times higher fracture toughness.
IT Welds
(aluminum alloy, mech. properties of, scandium effect on)
IT Welding
(argon-shielded arc, of aluminum alloy, scandium effect on mech. properties in)
IT 7440-20-2, Scandium, uses
RL: USES (Uses)
(in filler wire, mech. properties of welded joints of aluminum alloy in relation to)
IT 71714-78-8, AMg63 81159-87-7, AMg4
RL: USES (Uses)
(welding of aluminum alloy with wire of, scandium effect on mech. properties in)
IT 37301-69-2, Alloy 01420
RL: USES (Uses)
(welds of, mech. properties of, scandium effect on)

L30 ANSWER 82 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1992:44979 HCAPLUS
DOCUMENT NUMBER: 116:44979
ORIGINAL REFERENCE NO.: 116:7685a,7688a
TITLE: Arc welding of aluminum alloy 1420 products
AUTHOR(S): Ilyushenko, R. V.; Tretyak, N. G.; Lozovskaya, A. V.; Ishchenko, A. Ya.
CORPORATE SOURCE: Inst. Elektrosvarki im. Patona, Kiev, USSR
SOURCE: Avtomaticheskaya Svarka (1991), (4), 53-6, 60
CODEN: AVSVAU; ISSN: 0005-111X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Welds were prepared by multipass Ar-arc welding with nonconsumable electrode using wires SvAMg3, SvAMg63, AMg4, and VAL-16. The coarse-porous welds were formed in welding of the 2-6-mm thick sheets due to the H surface saturation The seam porosity was eliminated by pulsed-arc welding and prior removing of ≥0.05-mm deep layers. The surface layers have little effect on welding of thicker plates; microcavities near the fusion line are the main defects. The higher porosity occurred in welding with SvAMg3 wire than with AMg4, SvAMg63, and VAL-16 having lower m.p. The amount of microcavities in weld metal and in fusion and heat-affected zones significantly decreased and high mech. properties were attained in multipass welding with wires containing 4.5-6.0% Mg. The hot-cracking resistance of welds increased using the modified Al-Mg welding wires to obtain welds with fine-crystalline structure.
IT Welds
(aluminum alloy, gas tungsten-arc, porosity and hot-cracking

resistance of)
IT Welding
(gas tungsten-arc, of aluminum alloy, with magnesium
-containing wires, porosity and hot cracking in relation to)
IT 37301-69-2, Alloy 1420
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(welding of, argon-arc nonconsumable-electrode, porosity and hot
cracking resistance in relation to)
IT 71714-78-8, SvAMg63 81159-87-7, AMg4 125352-52-5, SvAMg3
135667-16-2, VAL-16
RL: USES (Uses)
(welding wire, for aluminum alloy, porosity and hot cracking
in relation to)

L30 ANSWER 83 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1991:476647 HCAPLUS
DOCUMENT NUMBER: 115:76647
ORIGINAL REFERENCE NO.: 115:13139a,13142a
TITLE: Physical microheterogeneity of aluminum
-alloy welds and initiation of corrosion-mechanical
defects
AUTHOR(S): Galkanov, V. A.; Sorokin, V. N.
CORPORATE SOURCE: TsNIIproekstalkonstr., USSR
SOURCE: Svarochnoe Proizvodstvo (1991), (3), 35-7
CODEN: SVAPAI; ISSN: 0491-6441
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB Stress corrosion of Ar arc welds of Al-Zn-Mg (heat-treated alloy
1915) and Al-Mg (strain-hardened AMg4) plates prepared with 1557
(AMg5) wire was studied. Interface microheterogeneity was responsible for
the initial stage of weld corrosion cracking. Elastoplastic deformation
did not affect strongly the corrosion crack nucleation.
IT Welds
(aluminum alloys, corrosion cracking of, microheterogeneity
effect on)
IT Welding
(argon-shielded arc, of aluminum alloys, interface
microheterogeneity effect on corrosion cracking in relation to)
IT 72267-09-5, AMg 5
RL: USES (Uses)
(welding wire, for aluminum alloys, interface
microheterogeneity effect on corrosion cracking in relation to)
IT 37360-00-2, Alloy 1915 81159-87-7, AMg4
RL: USES (Uses)
(welds, corrosion cracking of, effect of microheterogeneity on)

L30 ANSWER 84 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1992:64724 HCAPLUS
DOCUMENT NUMBER: 116:64724
ORIGINAL REFERENCE NO.: 116:11071a,11074a
TITLE: Structure and properties of aluminum-
magnesium-lithium alloy welds
AUTHOR(S): Ilyushenko, R. V.; Lozovskaya, A. V.; Sklabinskaya, I.
E.; Tretyak, N. G.; Chaika, A. A.
CORPORATE SOURCE: Inst. Elektrosvarki im. Patona, Kiev, USSR
SOURCE: Avtomaticheskaya Svarka (1991), (7), 23-6
CODEN: AVSVAU; ISSN: 0005-111X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB The effect of Sc addition on microstructure and mech. properties of the Al-
Mg-Li alloy welds was studied. Welding wires AMg4 and AMg63
containing Sc and Sc-free and SvAMg63 were used. The strength (350-360 MPa)

of the Al-Mg-Li-Sc welds was higher by 30-60 MPa than that of alloy 1420. Optimal combination of strength, ductility, and toughness of the Al-Mg-Li-Sc welds was attained using wire SvAMg63 containing 0.17% Sc. Welding with wire containing 0.5% Sc caused grain refinement. Heating to 670 K followed by artificial aging at 410 K after welding increased the weld strength to 380-400 MPa.

IT Welds
(aluminum-magnesium-lithium alloy, microstructure and mech. properties of, scandium addition and heat treatment effects on)

IT Welding
(gas tungsten-arc, of aluminum-magnesium-lithium alloys, scandium addition effect on)

IT 7440-20-2, Scandium, uses
RL: USES (Uses)
(aluminum alloy welds containing, microstructure and mech. properties of)

IT 71714-78-8, AMg63 81159-87-7, AMg4
RL: USES (Uses)
(welding with, of aluminum-magnesium-lithium alloys, scandium addition effect on)

IT 37301-69-2, Alloy 1420
RL: USES (Uses)
(welds, microstructure and mech. properties of, scandium addition effect on)

L30 ANSWER 85 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1990:557081 HCAPLUS
DOCUMENT NUMBER: 113:157081
ORIGINAL REFERENCE NO.: 113:26625a,26628a
TITLE: Processing of nonrecrystallized aluminum alloy sheets and plates.
INVENTOR(S): Cho, Alex
PATENT ASSIGNEE(S): Aluminum Co. of America, USA
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 368005	A1	19900516	EP 1989-118810		19891010
EP 368005	B1	19960911			
R: DE, FR, GB					
US 4927470	A	19900522	US 1988-256840		19881012
US 4946517	A	19900807	US 1988-256520		19881012
US 4988394	A	19910129	US 1988-256521		19881012
JP 02194153	A	19900731	JP 1989-266083		19891012
PRIORITY APPLN. INFO.:			US 1988-256520	A	19881012
			US 1988-256521	A	19881012
			US 1988-256840	A	19881012

AB Al alloy sheets and plates are prepared by ramp annealing, solution heat treating, quenching, and aging. The annealing is preferably started at ≤400 or ≤750 and finished at 680-850°F, or started at 350-450 and in 2-8 h finished at 750-850°F. The process is suitable for retention of fine-grained structure in the AA2000, AA6000, AA7000, and AA8000 type alloys. The resulting products show improved strength as well as fracture toughness, especially for aircraft applications. Thus, an Al alloy ingot (containing Zn 10, Mg 1.8, Cu 1.5, and Zr 0.12%) was heated and hot rolled to 1.5-in.-thick slabs, which were annealed at 750-880°F and then hot rolled to 0.3-in.-thick

plates. The plates were heated for 16 h at 400°F, heated further to 800°F in 4 h, held for 1 h, and water quenched. The resulting microstructure showed no recrystn.

IT Aluminum alloy, base
RL: USES (Uses)
(processing of nonrecrystd., for toughness)

IT 129703-71-5, Aluminum 87, copper 1.5, magnesium 1.8, zinc 10, zirconium 0.1 129703-72-6 129703-73-7 129703-74-8 129703-75-9 129703-76-0
RL: USES (Uses)
(processing of nonrecrystd., for toughness)

L30 ANSWER 86 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1990:635772 HCAPLUS
DOCUMENT NUMBER: 113:235772
ORIGINAL REFERENCE NO.: 113:39703a,39706a
TITLE: Mechanical properties of butt welds of wrought aluminum alloys
AUTHOR(S): Ryazantseva, V. I.; Grinin, V. V.; Ovchinnikov, V. V.
CORPORATE SOURCE: USSR
SOURCE: Svarochnoe Proizvodstvo (1990), (8), 8-10
CODEN: SVAPAI; ISSN: 0491-6441
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The static strength of butt welds of wrought Al alloys depends slightly on the method or regime of welding, or on the filler wire. The product form (sheet, hot-rolled plate, strip, forging, or stamping) affects most the static strength of weldment. The ductility of welds depends on the method of welding, filler metal, and product form. The best ductility is attained using pulsed arc welding. The fatigue strength of welds is determined by the weld shape and the product form, while the effect of other parameters is insignificant. The 01570-type alloys are recommended for weldments working at low-cycle loads (≤210-240 MPa); such weldments show a 1.5-5 fold increase in durability, compared to that of conventional AMg3, AMg4, AMg6, or 1201-type alloys.

IT Welds
(butt, aluminum alloys, mech. properties of)

IT Welding
(butt, of aluminum alloys)

IT 37301-69-2, Alloy 1420 64159-59-7, Alloy 01557 71631-36-2, Alloy 1177 71714-78-8, AMg63 81159-87-7, AMg4 125352-52-5, AMg3 125726-66-1, Alloy 1571
RL: USES (Uses)
(welding with filler of, mech. properties in relation to butt)

IT 12672-17-2, Alloy 1201 12732-16-0, AMg6 54424-86-1 55926-30-2, Aluminum base, lithium, magnesium 125726-63-8, Alloy 01570 125726-92-3, M40-1
RL: USES (Uses)
(welds, mech. properties of butt)

L30 ANSWER 87 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1989:462193 HCAPLUS
DOCUMENT NUMBER: 111:62193
ORIGINAL REFERENCE NO.: 111:10467a,10470a
TITLE: Corrosion of aluminum alloys in closed agricultural premises
AUTHOR(S): Rogozhina, E. P.; Koltunova, G. A.; Pashkova, O. A.; Golubev, A. I.
CORPORATE SOURCE: TsNIIProektstal'konstruktsiya, USSR
SOURCE: Zashchita Metallov (1989), 25(1), 120-4
CODEN: ZAMEA9; ISSN: 0044-1856
DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The corrosion of Al-Mg, Al-Mn, Al-Zn-Mg, and Al-Mg-Si alloys and tech. grade Al in agricultural buildings (greenhouses, fruit-vegetable canning plant, fertilizer storage building, champignon growing chamber) was studied. The corrosion resistance was greatly enhanced by anodization in a 20% H2SO4 + 1% H2C2O4 electrolyte at anodic c.d. 200 A/m2 and 18-23°.

IT Agriculture and Agricultural chemistry
(corrosion of aluminum alloys in, anodization for resistance to)

IT Anodization
(of aluminum alloys, for corrosion resistance in agricultural buildings)

IT 11146-15-9, AMtsN2 37302-00-4, 1911T 37360-00-2, 1915T 63747-67-1, AVT
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(corrosion of, in agricultural building, anodization for resistance to)

IT 7429-90-5, Aluminum, reactions 11121-92-9 37268-38-5, AD1M 37301-70-5 81159-87-7, AMg4M
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(corrosion of, in agricultural buildings, anodization for resistance to)

L30 ANSWER 88 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1990:123446 HCAPLUS
DOCUMENT NUMBER: 112:123446
ORIGINAL REFERENCE NO.: 112:20839a,20842a
TITLE: Estimation of the weldability of aluminum alloys
AUTHOR(S): Ryazantsev, V. I.; Grinin, V. V.; Ovchinnikov, V. V.
CORPORATE SOURCE: USSR
SOURCE: Svarochnoe Proizvodstvo (1989), (9), 7-9
CODEN: SVAPAI; ISSN: 0491-6441
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB Hot-crack susceptibility in elec.-arc welding of sheet, plate, and forged specimens 2-15 mm thick was evaluated for Al alloys AMg6, 1201, Al-Mg-Li, Al-Cu-Li, 1570-1, 1570-2, M40, and M40-1. Weldability tests were conducted with wire fillers. Hot cracks and delamination defects were typically associated with chemical inhomogeneous structure in the cross-section of industrial preforms. Welding automation and use of rotary electrodes were considered. Application of pulses to elec. current increased weld quality.

IT Welds
(in aluminum alloy strip, hot cracks in, structure effect on)

IT Welding
(of aluminum alloys, hot crack susceptibility in relation to)

IT 11100-85-9, M40 (Aluminum alloy) 12732-16-0, AMg6 37321-72-5, Alloy 1201 (aluminum alloy) 54424-86-1 55926-30-2, Aluminum base, lithium, magnesium 125726-64-9, Alloy 1570-1 (aluminum alloy) 125726-65-0, Alloy 1570-2 (aluminum alloy) 125726-92-3, M40-1 (Aluminum alloy)
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(welding of, hot crack susceptibility in, structure effect on)

IT 37301-69-2, Alloy 1420 (aluminum alloy) 71631-36-2, Alloy 1177 (aluminum alloy) 71714-78-8, AMg63 81159-87-7 106747-93-7, AK5 (aluminum alloy) 125726-66-1, Alloy 1571 (aluminum alloy)
RL: USES (Uses)
(welding wire filler, hot crack susceptibility in relation to)

L30 ANSWER 89 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1988:10081 HCAPLUS
DOCUMENT NUMBER: 108:10081
ORIGINAL REFERENCE NO.: 108:1729a,1732a
TITLE: Improvement of strength and rupture-toughness of aluminum alloy containing lithium
PATENT ASSIGNEE(S): Boeing Co., USA
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62164859	A	19870721	JP 1986-251564	19861021
US 4840682	A	19890620	US 1985-800503	19851121
CA 1280341	C	19910219	CA 1986-514223	19860721
US 4999061	A	19910312	US 1989-337956	19890414
PRIORITY APPLN. INFO.:			US 1985-800503 A	19851121
			US 1983-567227 B2	19831230

AB Al alloys containing Li 1.0-3.2, Mg 0-5.5, Cu 0-4.5, Zr 0.08-0.15, Mn 0-1.2, Fe ≤0.3, Si ≤0.5, Zn ≤0.25, Ti ≤0.15, and others ≤0.3% are solution treated, quenched, and aged for 1-80 h at 200-300°.
IT 111892-44-5
RL: USES (Uses)
(solution treatment and quenching and aging of, for strengthening and toughening)

L30 ANSWER 90 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1988:99472 HCAPLUS
DOCUMENT NUMBER: 108:99472
ORIGINAL REFERENCE NO.: 108:16271a,16274a
TITLE: Aluminum alloy for die-casting without cracking
INVENTOR(S): Hirasawa, Hiroaki; Takikita, Takanori
PATENT ASSIGNEE(S): Nippon Light Metal Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62142739	A	19870626	JP 1985-282990	19851218
PRIORITY APPLN. INFO.:			JP 1985-282990	19851218

AB The die-casting Al alloy contains Zn 2-4.0, Mg 4-7, Fe 0.4-1.0, Mn 0.2-1.0, Si 0.4-1.0, and Cu 0.01-0.5, optionally with Ti <0.2, B <0.1%, and/or Zr 0.05-0.2%. The castings show tensile strength 28-36 kg/mm2 with high elongation after heat treatment. Thus, molten Al alloy (containing Zn 3.0, Mg 5.0, Fe 0.6, Mn 0.4, Si 0.6, Ti 0.005, B 0.001, and Cu 0.1%) was poured at 700° to manufacture a die-cast plate 6 mm thick. The plate was solution heat-treated at 500° and quenched in water. Tensile strength was 33, yield strength 21 kg/mm2, and elongation 5%, vs. 35.8, 33 kg/mm2, and 1.2% for a similar plate from AADC 12 alloy. A die-cast plate 6 mm thick with fins 0.5-2 mm thick did not form casting cracks, while a similar product from AADC 12 formed cracks at the fin roots.

IT Casting process
(die-, of aluminum-magnesium-zinc alloy, structural parts without cracks by)
IT 7439-95-4
RL: USES (Uses)
(casting process, die-, of aluminum-magnesium-zinc alloy, structural parts without cracks by)
IT 112985-66-7 112985-67-8 112985-68-9
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(die casting of, heat treatment after, strength and ductility by)

L30 ANSWER 91 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1987:501308 HCAPLUS
DOCUMENT NUMBER: 107:101308
ORIGINAL REFERENCE NO.: 107:16460h,16461a
TITLE: Metallic gasket
INVENTOR(S): Sakai, Yakichi
PATENT ASSIGNEE(S): Nippon Gakki Co., Ltd., Japan; Hamamatsu Gasket Seisakusho Ltd.
SOURCE: Ger. Offen., 7 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3633988	A1	19870416	DE 1986-3633988	19861006
DE 3633988	C2	19900613		
US 4810591	A	19890307	US 1986-916293	19861007
PRIORITY APPLN. INFO.:			JP 1985-224777 A	19851011

AB A composite for manufacture of gaskets for internal-combustion engines consists of a substrate 0.10-0.35 mm thick made from a heat-resistant spring steel containing C 0.4-1.0 and Si 0.1-0.5%, or from a Ni alloy containing 10-25% Cr, clad on each side with 0.03-0.15 mm thick layers of Cu, Al, Cu alloy containing Fe ≤3.5, Sn ≤3.0, Zn ≤45, Al ≤12, Mn ≤2.0, Ni ≤35, and P ≤0.5%, or Al alloy containing Si ≤1.2, Fe ≤1.0, Cu ≤5.0, Mn ≤1.5, Mg ≤5.0, Cr ≤0.5, Zn ≤5.0, Ti ≤0.5, V ≤0.5, and Zr ≤0.5%. Optionally, the steel contains Mn ≤1.0, Cr ≤1.5, and/or V ≤0.5%. The Ni alloy optionally contains Fe ≤30, C ≤0.2, Si ≤1.0, Mn ≤1.0, Cu ≤1.0, Al ≤2.0, Ti ≤3.0, and/or (Nb + Ta) ≤1.5%. Preparation of gaskets involves heat treatment at 350-500° and at 450-500° for Cu and Al cladding, resp. Thus, the composite having SUS 301 H alloy substrate had a tensile strength of >170 kg/mm2 after heat treatment at .apprx.400°.
IT Gaskets
(steel-copper or steel-aluminum composite, for internal-combustion engines)
IT 12725-26-7 109982-56-1
RL: USES (Uses)
(composite of, with copper or aluminum cladding, for internal-combustion engine gaskets)
IT 58674-67-2 109982-57-2, uses and miscellaneous 109982-58-3 109982-59-4 109982-60-7 109982-61-8 109982-62-9 109982-63-0 110000-08-3
RL: USES (Uses)
(composite of, with copper, aluminum, copper alloy, or

aluminum alloy cladding, for internal-combustion engine gaskets)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 92 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1986:54985 HCAPLUS
DOCUMENT NUMBER: 104:54985
ORIGINAL REFERENCE NO.: 104:8801a,8804a
TITLE: Low-density aluminum alloys
INVENTOR(S): Skinner, David John; Okazaki, Kenji; Adam, Colin Mclean
PATENT ASSIGNEE(S): Allied Corp., USA
SOURCE: Eur. Pat. Appl., 28 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 158769	A1	19851023	EP 1985-100476	19850118
EP 158769	B1	19880504		
R: CH, DE, FR, GB, LI				
US 4661172	A	19870428	US 1984-584856	19840229
CA 1228491	A1	19871027	CA 1985-474001	19850211
JP 60208445	A	19851021	JP 1985-40244	19850228
JP 02036661	B	19900820		
JP 01272742	A	19891031	JP 1988-67998	19880322
PRIORITY APPLN. INFO.:			US 1984-584856 A	19840229

AB Light-weight Al alloys having high strength and toughness are suitable for structural components in aircraft, spacecraft, and automobiles. The alloys contain Li 2.7-5, Mg 0.5-8, and Zr 0.25-2 with Cu, Si, Sc, Ti, V, Hf, Be, Cr, Mn, Fe, Co, and/or Ni 0.5-5%. The alloys have a fine-grained matrix of supersatd. Al-alloy solid solution with uniformly dispersed intermetallic phases. Powdered alloys are sintered in vacuum at elevated temperature, followed by a solution heat treatment, quenching in a fluid bath, and optionally stretching and aging. Thus, Al alloy containing Li 4, Cu 3, Mg 1.5, and Zr 1.25% after heat treatment for 2 h at 350° had intermetallic phases 10-20% the size of those in a similar alloy containing 0.2% Zr.
IT 100081-46-7 100081-47-8 100100-19-4
RL: USES (Uses)
(strength and toughness of low-d.)

L30 ANSWER 93 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1984:55598 HCAPLUS
DOCUMENT NUMBER: 100:55598
ORIGINAL REFERENCE NO.: 100:8455a,8458a
TITLE: Corrosion of aluminum alloys in farm buildings
AUTHOR(S): Rogozhina, E. P.; Pashkova, O. A.; Golubev, A. I.
CORPORATE SOURCE: Tsentr. Nauchno-Issled. Proektn. Inst. Stroit. Metallokonstr., Moscow, USSR
SOURCE: Zashchita Metallov (1983), 19(6), 879-84
CODEN: ZAMEA9; ISSN: 0044-1856
DOCUMENT TYPE: Journal
LANGUAGE: Russian

AB The corrosion resistance of Al alloys AD1M [37268-38-5], AMg2AP [88505-71-9], AMg4N [81159-87-7], AD31T5 [11121-92-9], AVAT [73929-28-9], 1915T [61536-53-6], and 1911T [37302-00-4] in livestock

barns and waste treatment systems was studied, some of the samples being anodized in 20% H2SO4 solution with the addition of 1% oxalic acid at 2 A/cm2 and 18-23°. In the low-aggressive atmospheric of livestock barns, corrosion was not observed in AMg4N and its depth in Al-Mg and Al-Mg-Si alloys was <60 μ only. Al- Mg-Zn alloys required the protection provided by the 8-9 μ anodic-oxide coating, properties of which remained unchanged for <2 yr. In the waste treatment system atmospheric (aeration tanks), AMg4N had the highest corrosion resistance, whereas 1915T, the lowest one. All the alloys required protection. The anodic-oxide coating was highly effective.

IT Anodization
(of aluminum alloys, for corrosion protection in livestock barns and aeration tanks)

IT Coating materials
(anodic, on aluminum alloys, for corrosion protection in livestock barns and aeration tanks)

IT 11121-92-9 37268-38-5 37301-70-5 37302-00-4 37360-00-2 73929-28-9 81159-87-7
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(corrosion of, in livestock barns and aeration tanks, anodic oxide coating effect on)

L30 ANSWER 94 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1981:51594 HCAPLUS
DOCUMENT NUMBER: 94:51594
ORIGINAL REFERENCE NO.: 94:8365a,8368a
TITLE: Welding crack behavior of aluminum alloys
AUTHOR(S): Schoer, H.
CORPORATE SOURCE: Leichtmet.-Forschungsinst., Verein. Alum.-Werke A.-G., Bonn, Fed. Rep. Ger.
SOURCE: Metall (Isernhagen, Germany) (1980), 34(6), 546-51
CODEN: MTLLAF; ISSN: 0026-0746
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Formation of hot cracks was studied in welds of 99-99.9% Al, non-hardenable Al-Mn, Al-Mg. and Al-Mg-Mn alloys, and precipitation-hardenable Al-Cu-Mg, Al-Cu-Si-Mn, Al-Mg-Si, Al-Zn-Mg, and Al-Zn-Mg-Cu alloys. The resistance to weld cracking of AlZn4.5Mg1 [12675-83-1] decreased in the presence of Cu and increased with increasing Zr content introduced with the filler wires S-AlMg5Zr [75686-79-2] and S-AlMg4.5MnZr [75686-78-1]. The formation of H-induced micropores in the welds of alloy AlZn4.5Mg1F35 was also decreased the presence of Zr.

IT Welds
(aluminum alloy, cracking of)

IT 7429-90-5, uses and miscellaneous 12608-67-2 12615-48-4 12616-75-0 12616-86-3 12627-49-5 12675-83-1 12675-83-1 12732-10-4 12732-13-7 75635-87-9 75686-78-1
RL: USES (Uses)
(cracking of welded)

IT 12675-83-1 75686-78-1
RL: USES (Uses)
(welding by, of aluminum alloys, cracking in relation to)

L30 ANSWER 95 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1977:159815 HCAPLUS
DOCUMENT NUMBER: 86:159815
ORIGINAL REFERENCE NO.: 86:25067a,25070a
TITLE: Aluminum alloy
INVENTOR(S): Fridlyander, I. N.; Anan'in, S. N.; Gol'dbukht, G. E.; Balakhontsev, G. A.; Moskvichev, G. G.; Byvalov, A.

A.; Efremov, N. L.; Seredkin, A. V.; Nazarov, A. N.
PATENT ASSIGNEE(S): USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1976, 53(38), 90.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 531883	A1	19761015	SU 1974-2042052	19740708
PRIORITY APPLN. INFO.:			SU 1974-2042052 A	19740708

AB To increase strength and maintain corrosion resistance, Zr, Be, and Sb are added. A typical Al alloy [62388-53-8] contains Mg 1.8-4.2, Si 0.3-1.7, Cu 0.01-1.6, Mn 0.1-0.8, Cr 0.01-0.3, Fe 0.01-0.9, Zn 0.01-1.5, Ti 0.001-0.15, Ni 0.001-0.2, Pb 0.0001-0.05, Sn 0.0001-0.05, Zr 0.001-0.15, Be 0.0001-0.01, and Sb 0.001-0.15 weight%.
IT 7440-36-0, properties 7440-41-7, properties 7440-67-7, properties
RL: PRP (Properties)
(corrosion resistance and strength of aluminum-magnesium alloys containing)
IT 62388-53-8
RL: USES (Uses)
(corrosion-resistant high-strength)

L30 ANSWER 96 OF 96 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1977:110161 HCAPLUS
DOCUMENT NUMBER: 86:110161
ORIGINAL REFERENCE NO.: 86:17365a,17368a
TITLE: Aluminum alloy
INVENTOR(S): Fridlyander, I. N.; Isaev, V. I.; Chekanov, A. N.; Vinokurov, N. D.; Kopytov, G. A.; Savchuk, A. I.; Zhigalovskii, B. V.; Bazhenov, V. A.; Varlamov, S. B.; et al.
PATENT ASSIGNEE(S): USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1976, 53(37), 68-9.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 530919	A1	19761005	SU 1975-2165712	19750731
PRIORITY APPLN. INFO.:			SU 1975-2165712 A	19750731

AB The Al alloy [61992-87-8] with increased strength, ductility, and stress rupture strength contains Zn 7-11, Mg 2.5-4.0, Cu 1.0-2.6, Mn 0.2-1.2, Zr 0.1-0.3, Ti 0.02-0.3, Be 0.005-0.2, Co 0.05-0.3, and Nb 0.005-0.2 in addition to Cr, B, V, Cd, W, Fe, and/or Si 0.0001-0.3 weight% each.
IT 61992-87-8
RL: USES (Uses)
(with increased ductility and strength)

=> d cost
COST IN U.S. DOLLARS SINCE FILE ENTRY TOTAL SESSION

CONNECT CHARGES	5.56	65.82
NETWORK CHARGES	0.14	2.38
SEARCH CHARGES	0.00	85.60
DISPLAY CHARGES	324.48	336.91
FULL ESTIMATED COST	330.18	490.71

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-78.72	-78.72

IN FILE 'HCAPLUS' AT 09:24:36 ON 30 MAR 2009

=> logoff
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	333.03	493.56

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-78.72	-78.72

STN INTERNATIONAL LOGOFF AT 09:24:41 ON 30 MAR 2009